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ABSTRACT

Collaborative research in nursing is discussed in five papers from the 1983 conference of the Southern Council on Collegiate Education for Nursing. Also included are 32 abstracts of nursing research, focusing on clinical practice, as well as nursing education and research models. Paper titles and authors are as follows: "Building a Climate for Collaborative Research" (Joanne Horsley); "Establishing and Implementing Collaborative Investigations" (Carolyn A. Williams); "Ethical Aspects of Collaborating with Clients" (Shirley P. Damrosch); "The Ethics of Inter-Discipline Collaboration" (Oscar C. Stine); and "Ownership of Data and Plagiarism in Research" (Carolyn F. Waltz). Abstracts of clinical research cover topics such as head injuries and risk of coronary heart disease. Abstracts on nursing education cover: grade inflation in an associate degree nursing program, power sharing in university nursing programs, perceptions of top academic nurse administrators' on their job requirements, collaboration in continuing education for nursing, and nursing faculty perceptions of an integrated curriculum. Additional abstracts cover topics such as: models for multivariate effect size estimation in clinical nursing research, Q methodology in nursing research, and a collaborative model for developing nursing theory. (SW)

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**RESEARCH IN NURSING PRACTICE,
EDUCATION, AND ADMINISTRATION:
COLLABORATIVE, METHODOLOGICAL,
AND ETHICAL IMPLICATIONS**

**Proceedings of the
Third Annual SCCEN Research Conference**

U.S. DEPARTMENT OF EDUCATION
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December 2-3, 1983
Baltimore, Maryland

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Edited by:
Ora L. Strickland, RN, PhD, FAAN
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FOREWORD

At the annual research conference of the Southern Council on Collegiate Education for Nursing, held December 2-3, 1983, in Baltimore, Maryland, five papers on collaborative research offered practical pointers on structuring a climate for collaborative research, described characteristics of successful collaborative groups, suggested collaboration with clients and other professions as well as nurse researchers, and identified ethical problems in collaborative research.

Also presented were thirty-two abstracts of nursing research, chosen through a refereed process of blind review by the paper review committee. The majority of studies pertain to clinical practice--ranging from specialty topics such as head injuries to general, such as the effect of hot liquid drinks on febrile patients. Nursing education studies range from a study on grade inflation in an associate degree program, to faculty perceptions of an integrated curriculum. Researchers offer models for multivariate meta-analytic procedures that allow for translating principles of holistic health approaches to holistic research paradigms, discuss the use of Q methodology, and warn against the neglect of reliability estimates in nursing research.

The University of Maryland School of Nursing hosted the conference. Members of the SCCEN Research Committee, who assisted in general planning, are: William E. Field, Jr., University of Texas at Austin; Margaret T. Beard, Texas Woman's University; Mary Colette Smith, University of Alabama in Birmingham; and Ora L. Strickland, University of Maryland, Baltimore.

Audrey F. Spector
Executive Director
Southern Council on Collegiate
Education for Nursing

BUILDING A CLIMATE FOR COLLABORATIVE RESEARCH

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Building a climate for collaborative research is a difficult topic to address. Difficult because on the one hand, it is viewed by many as a very desirable approach to clinical research and experience shows it holds much promise, while on the other hand, little evidence can be found of its occurrence in nursing nor are there easy answers as to how we might support its occurrence on a permanent basis.

What is the meaning of the phrase collaborative research? It is important to recognize that two distinct and different processes are delineated in the phrase. The first process, that of collaboration, is used to carry out a second process, research, in order to produce a product, knowledge. It is important to note that, for the purposes of this paper, the collaboration is to occur among faculty members and clinicians--professional nurses who are usually employed by different organizations. And, we must recognize that the faculty members and clinicians, and their respective employing organizations, may (most probably do) have both similar and dissimilar reasons for engaging in nursing research.

The Promise of Collaborative Research

Collaborative research in nursing is not new. In fact, it has been an essential component of a number of nursing research development projects for at least the past 15 years. In these projects collaborative research had the following characteristics: research groups with

two or more members who represented different organizations and/or roles; group members who were interested in the same general research topic and collectively represented a more diverse point of view regarding the topic and how to study it than generally occurs with an individual investigator; and finally, group members who worked together throughout the conduct of the research from the initial conceptualization of the study to the final report or publication.

A review of some of the research development projects readily reveals the benefits of engaging in a collaborative research process. The largest single project incorporating a collaborative research process was conducted under the auspices of the Western Interstate Commission for Higher Education (WICHE) and is known as the Regional Program for Nursing Research Development. Approximately 350 participants who represented approximately 250 different organizations worked in over 75 separate collaborative research groups. Group size ranged from two to ten members (Krueger, Nelson & Wolanin, 1978). In describing the project, Lindeman and Krueger (1977) cited a number of beneficial effects from the use of a collaborative research approach. The benefits can be classified into two categories: benefits pertaining to the research and benefits pertaining to the to the investigators.

Benefits pertaining to the research included:

- group members who provided multiple viewpoints regarding all aspects of the research process;
- potential for larger sample sizes resulting from the use of multiple settings;
- increased flexibility in approaches used to investigate different types of research questions, for example, concurrent replication in multiple settings.

Benefits pertaining to the investigators included:

- an apprenticeship approach in which novices learned from those more experienced, and where the apprentice and master roles switched at different points in the research process;
- division of labor among group members that resulted in maximum utilization of group members' skills;
- the potential for continuous peer review;
- group pressure to complete assigned work on schedule.

In their report of the Nursing Research Development in the South project, Mauger and Huggins (1980) cited two additional benefits of the collaborative research process: (1) when individual participants and their institutions lacked some of the resources necessary to conduct research, the missing resources usually became available through other group members and their institutions; and (2) it provided more initial points from which dissemination of results could occur. Krone and Loomis (1982), in a report describing the Collaborative Research Program of the Conduct and Utilization of Research in Nursing project, proposed that when clinicians and researchers engage in collaborative research the outcome will be more relevant to practice than when clinicians are not involved.

Three types of benefits of collaborative research have been identified: research that is scientifically sound and practice relevant; professional growth and shared labor for the investigators; and increased access to technical resources. I think we would all agree that these benefits represent a substantial contribution to our research efforts.

It is difficult to determine the extent to which collaborative research actually occurs in nursing. One source of available data is published reports of collaborative research studies. However, research publications provide only indirect evidence of the use of a collaborative research process through the examination of the titles and employing organizations of the authors of the articles. These data are subject to erroneous interpretation arising from the fact that authors are not necessarily the only investigators and the published author titles and organizational affiliation may not represent the actual role and employing organization of the authors when the study was conducted. In spite of these problems, this method was used to determine an estimate of the frequency of collaborative research during the past five years. A convenience sample of 36 issues of Nursing Research, Research in Nursing and Health, and the Western Journal of Nursing Research containing 297 articles was reviewed. Only 7 percent or 22 articles were co-authored by investigators who were faculty in schools of nursing and clinicians from clinical agencies. Four of the 22 co-authored articles reported research initially sponsored by the WICHE research development grant. With one exception, articles describing the use of the collaborative research process were reports of federally funded research development grants.

On the basis of this indirect evidence, it would appear that relatively little collaborative research has occurred outside the context of large externally funded research development projects. Why is this the case when the benefits are so obvious? The first, and I believe the foremost, reason is that the research development projects provided an organizational structure specifically developed to support collaborative research activity. These projects assumed many of the characteristics of organizations—they provided purpose and goals, a means of identifying other investigators with similar research interests, resources (travel costs, research expertise, pilot project funding), and communication mechanisms (workshops, teleconferencing). The

participants became collaborators because the projects brought them together; they did not start as self-identified group members. The project provided the purpose and meaning for the existence of each group. When the "organizational structures" ceased to exist, so too, to a large extent, did the ongoing operation of the collaborative research groups.

Is an organizational entity of some kind really necessary? Collaborative research does occur, but it usually involves researcher-to-researcher collaboration rather than faculty-clinician collaboration. There are several reasons for this. First, researchers are more likely to know, or know of, one another than are faculty members and clinicians. In other words, familiarity breeds collaboration. Second, researchers have existing mechanisms, such as research conferences, that bring them together from time to time. These mechanisms are less readily accessible to clinicians. For these reasons I submit that we need to replace the organizational structure or system functions provided by research development grants if we want to support the use of a collaborative research process. Further, the new structure must, in some way, bring faculty members and clinicians together through mechanisms provided by their employing organizations.

An examination of the forces that serve to facilitate or hamper research collaboration between educational and clinical organizations should provide some guidance regarding the nature of the organizational arrangements that will be needed. The facilitating forces include:

1. Both types of organizations employ nurses who are interested in engaging in research activity.
2. Both types of organizations need to engage in research activity in order to attain their respective goals.

3. Both types of organizations have a positive orientation toward nursing research; it may be more pronounced in academic institutions but it is clearly evident in clinical agencies.
4. The research endeavors of each organization would be enriched through the use of the human and technical resources available in the other organization.
5. Within the profession, there is a general movement toward reuniting these organizations for the pursuit of common goals. (Reuniting does not necessarily mean unification as it is currently used.)

The forces that impede the occurrence of collaborative research are more complex than those that facilitate it. Four inhibiting forces have been identified:

1. Although both organizations are positively oriented toward the use of research as a means of attaining goals relating to practice and theory, the relative emphasis each places on such goals varies greatly. This variance in emphasis influences both the nature of the research question to be addressed and the way in which the process of scientific inquiry occurs. The variance in emphasis occurs in three areas:

Immediate applicability. Clinicians and their organizations engage in research activity in the hope of solving practice problems in an immediate time frame--the generation and accumulation of knowledge is a long-range goal. Academic institutions view the time frame for these goals in a different manner, with knowledge generation and accumulation being the immediate goal and utilization of the knowledge in practice being a long-term goal.

How the relevance of the study is judged.

The basis for determining the value of the research question to be addressed is also different for clinician and faculty researchers. The clinician tends to evaluate the research question in terms of its relevance for practice, while the faculty member tends to evaluate the research question in terms of its potential for advancing the state of the knowledge in the area of interest.

Relation to the generalizability of research outcomes. Clinical systems press for immediate answers to local problems, while academic systems focus on the generation of knowledge that can be generalized for all relevant situations.

2. To provide a basis for collaboration, both organizations must recognize the value of the other's view of the goals of research and be willing to provide some of their resources for use in attaining those goals.
3. Inherent in a collaborative process is the need to resolve different points of view and reach common understandings and agreement on how to proceed. This increases the time required to conduct a study and acts as an inhibitor to the use of collaborative research.
4. Faculty members and clinicians have limited access to information regarding one another's research interests and freedom to engage in research as a part of their position. This clearly limits the possibility of identifying appropriate research collaborators.

To overcome the factors that inhibit collaborative research, two different levels of intervention become

apparent. The first is based on the assumptions that the major inhibitor is the lack of a means for faculty members and clinicians to become aware of each other's research interests and that individuals can overcome the other negative forces without overt formal inter-organizational support. If these assumptions are true, some type of information exchange mechanism is needed that would link schools of nursing and nursing care systems within geographical boundaries to allow relatively easy access among relevant faculty members and clinicians. The information to be exchanged should include the types of technical resources (for example, computer access to subjects) available in each organization and relevant information about the clinicians and faculty members who are interested in and available to participate in collaborative research studies.

If one assumes that individuals cannot overcome the other forces that inhibit collaborative research, and that formal interorganizational agreements are necessary, then a more elaborate intervention is needed. At an organizational level, two factors in addition to individual clinician-faculty linkage become important and must be explicitly handled in the formal arrangements.

The first factor is the commitment of each organization to provide the resources necessary for collaborative research. Of particular importance is the amount and duration of faculty or staff time that will be released for collaborative projects. This is particularly important because any specific study may fit the goals and needs of one organization better than the other. The formal commitment of time provides assurance that study will be completed.

The second factor that requires explicit negotiation and agreement is how collaborative research projects will be selected. This is important because of potential disagreement regarding the objectives of proposed collaborative studies. Interorganizational agreement regarding the purposes of a given study and the resources

committed for the conduct of the study provides the faculty and clinician investigators with assurance that their collaborative work represents the interests of their respective organizations and the requirements of their employment contract. These agreements could potentially take the form of the student clinical experience contracts already in use in schools of nursing.

What conditions within schools of nursing and nursing service agencies might be associated with research productivity?

During the early Sixties two scientists, Donald Pelz and Frank Andrews (1966) conducted a study to identify how two types of human factors in the environments of various kinds of research and development organizations were associated with research productivity: those associated with the working conditions that prevailed in the setting, for example, freedom, communication, and diversity; and those associated with the scientist, for example, motivation, dedication, age, and creativity.

The subjects in the study were 1,311 scientists and engineers representing 11 different research laboratories. Included in the sample were 641 industrial scientists, 144 university scientists, and 526 government scientists. The scientists represented a wide range of fields engaged in research and development, including the social, biological, and health sciences.

Research productivity was defined in four different ways. Each scientist was rank-ordered with his laboratory peers both for his contribution to the general or technical knowledge in his field and his overall usefulness in helping the organization carry out its responsibilities. The judges were supervisory personnel from each laboratory who knew the work of each individual scientist they evaluated. Productivity was also measured by counting the number of scientific products--published papers, technical reports, and patent applications--produced by each scientist over a five-year period.

For the purposes of this paper I will discuss only the findings related to the environmental conditions.

The first variable of interest was freedom or autonomy to determine the goals and objectives of the various projects conducted by the subjects/scientists. Freedom or autonomy was measured in terms of the number of different sources of decision-making influence brought to bear on each scientist's work, the extent to which the scientists themselves could influence the other decision-makers, and who the decision-makers were, for example, self, colleagues, supervisor, or executives. The findings showed that increased productivity occurred when multiple sources of decision-making influence were used to determine project objectives and when the scientists believed they could influence the other decision-making sources. PhDs in research settings were most productive when the decision-making sources were self, and colleagues. Non-PhDs in research settings were most productive when they and/or their colleagues determined the project objectives. Of particular note is the fact that the majority of the PhD-prepared scientists who had total freedom to set project objectives were less productive than those who did not have such freedom.

The second variable of interest was communication among colleagues. In attempting to measure communication patterns among scientists, Pelz and Andrews took the view that a research laboratory is a system of interacting scientists (and other components) in which the scientists stimulate each other to produce high quality work. In other words, the laboratory is more than a facility which simply provides services and equipment so that its scientists can conduct research (Pelz & Andrews, 1966, p. 35).

Four different measures of colleague communication were positively associated with research productivity for the doctorally-prepared scientists and engineers: frequency of contact with most important colleagues,

amount of time spent in contact with important colleagues, the number of people in their immediate work groups, and the number of people from other groups within the organization with whom they had contact. In general, the most productive scientists were those who (1) had the most frequent contact with colleagues (daily or several times per week); (2) spent the most time in contact with important colleagues (6 to 10 hours per week per colleague for PhDs, slightly more for engineers); (3) worked with larger numbers of immediate co-workers (10 to 20); and (4) had more contacts with colleagues outside their immediate work group but within the organization.

The last variable of interest was diversity in the type of scientific teaching or administrative functions carried out by the subjects. Diversity of function was measured in terms of percent of time spent in administrative, scientific/technical, and teaching activities. Scientific functions were further defined as being research, development, or technical service functions. In general, research productivity was higher for scientists who spent 25 to 50 percent of their time in non-research functions (for example, teaching and administration), and for scientists whose research activity included both research and development functions.

An analysis of the relationship suggested by Pelz and Andrews' work provides an answer as to how to build a climate for collaborative research.

In relation to freedom or autonomy, the collaborative research process requires the faculty and clinician researchers to reach mutually satisfactory decisions regarding all aspects of the research process--a condition that is similar to the self and colleague condition identified by Pelz and Andrews. It is important to have in operation an administrative review regarding project selection so that it does not unduly interfere with the decisions made by the collaborative research group members.

In relation to communication, it should be apparent that the collaborative research process provides most of the conditions identified by Pelz and Andrews. First, it requires ongoing contact among the members of a collaborative research group. Although the typical collaborative research group is small (2-10 members), this would still represent a gain in number of colleague contacts for the members of the group. While colleague-to-colleague contact is an integral part of the collaborative research process, it is difficult to imagine having the luxury of 6 to 10 hours of contact time per week per colleague in the foreseeable future. Nonetheless, the collaborative research process does provide increased communication by legitimizing the expenditure of time spent in contact with larger numbers of research colleagues.

In relation to diversity, the collaborative research process clearly provides investigators with an opportunity, if not an expectation, to work on projects with both research and development objectives. The collaborative research process would have little influence regarding the proportion of time spent on research versus other types of job responsibilities. Clearly it will be a long time before the base budgets of schools of nursing and clinical agencies can provide the financial resources to support multiple investigators who spend 50 percent of their time on research. However, some academic and clinical organizations are currently able to support multiple investigators for as much as 25 percent time for research. Perhaps what is most important is the understanding that research productivity is inhibited if less than 25 percent of an investigator's time is spent in research activity.

This analysis of the relationship between the three environmental conditions positively associated with research productivity and the collaborative research process leads to the realization that the collaborative research process provides its own climate for the conduct

of research. The task that confronts us is not to build a climate for collaborative research, but instead, to find a way to stimulate and maintain its existence as an approach to scientific inquiry. If we can solve that problem, the collaborative research process will in and of itself provide a productive climate for nursing research.

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ESTABLISHING AND IMPLEMENTING COLLABORATIVE INVESTIGATIONS

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Overview

In an effort to be systematic in addressing the important topic before us, preparation of this paper began with a search of the nursing literature; however, little was found on the topic of collaborative research. Of the few items located, three references proved to be particularly helpful: Krueger, Nelson, and Wolanin's book (1978) which documents their experience with the Western Commission on Nursing Education's Research Development project and two papers, one by Felton and McLaughlin (1976) and another by Dishrow (1982). After considering the nursing research literature, attention was directed to the social science literature where several papers which were tangentially related to the topic were located. What was impressive about the literature review was the limited attention this very important issue has received. Therefore, many of my comments are based entirely upon my own experience in collaborative research and conversations with colleagues.

What is Meant by Collaborative Research?

Whether collaborative research is rare or relatively common depends on how it is defined. One approach is to refer to collaborative research as research developed by two or more individuals who pool their knowledge and resources to pursue a research question. However, to leave the definition here is inadequate. It is important to make a distinction between collaborative research

viewed as a cooperative endeavor among professionals who consider each other as peers and who also share values of democratic governance and group research. While group research involves multiple investigators, its similarity with true collaborative research ends there. In fact, group research may be handled in a very hierarchical manner, and a high level of competition may be the rule. In distinguishing between group research and collaborative research, it may be useful to consider a continuum with collaborative efforts as an ideal at one end and group research, meaning simply several investigators working together on a project, at the other. Projects can be distributed along dimensions such as parity among investigators and democratic governance. Further, it may be useful to point out that a given project may shift on these dimensions during its course.

Another characteristic of collaborative research is the collaborative projects may or may not involve collaborators from two or more disciplines. This issue is particularly confusing when discussing nursing research because nurse researchers who are working together may have had very different programs of doctoral preparation and may approach research questions in very different ways. While a casual observer may see two nurses and argue that the project is really not interdisciplinary, it may, in fact, have the "feel" and some of the characteristics of interdisciplinary research.

Why is Collaborative Research Considered Important?

Many share an implicit assumption that collaborative research is a good thing. The Division of Nursing seems to take this position—the Nursing Research Emphasis Grants for schools with doctoral programs are designed to stimulate collaborative research both among faculty members and between faculty and doctoral students.

Why is collaborative work being encouraged? Several possibilities can be suggested. Collaborative work is frequently projected as a good use of resources because it can be argued that: (a) it increases the chances of developing information of broad significance; (b) it increases the chances of generating a sequence of studies producing a body of information in a given area, and; (c) it provides a framework or structure for the crucial socialization of doctoral students and post-doctoral fellows into active research roles. In my view, more collaborative work is indicated if nursing is going to develop the productive research efforts necessary to contribute to the knowledge base for health promotion, disease prevention, and nursing care. I further argue that such collaboration should not be limited to the "borderlands" mentioned by Stine during this conference (SCCEN, 1985), but it is needed in areas of central concern to the discipline.

When Is Collaboration Indicated?

I would propose that there are three major conditions, any of which might lead to the conclusion that one should engage in collaborative research. When all three are present, collaborative research is clearly indicated and has a high probability of success. These conditions are: (1) a strong mutual interest in the research question(s); (2) the question(s) under investigation demand resources beyond those of one investigator to be adequately handled; and (3) the investigators' desire to work with each other as colleagues.

Group research and collaborative research are more of a tradition in some fields than others. For example, in epidemiology the research question frequently involves several levels of analysis. When considering associations between various environmental characteristics, personal characteristics, and a health (or

disease) state, variables may be conceptualized at the sociological, the physical, and the biological level. Another reason is the large numbers of individuals being studied. Epidemiologists frequently undertake large community prevalence surveys of various disease states, such as hypertension. And, there are cohort studies which observe people over long periods of time which may, indeed, span the careers of several researchers. The Framingham heart study (Haynes, Levine, Scotch, Fienleib & Kannel, 1978) is an example. Finally, there are large intervention trials involving multiple clinical sites and multiple investigators. Such group efforts have considerable payoff in the creation of large data sets and the generation of opportunities for many investigators, including doctoral students, to be engaged in the pursuit of research questions. Other fields have similar traditions; in the biological arena, laboratories are pursuing particular lines of inquiry and a number of investigators and their doctoral-postdoctoral fellows work together.

While there is less of a tradition of group and collaborative work in nursing, we are moving in that direction. In fact, 48 percent of the papers presented in this conference may have been collaborative efforts. The program indicates that 16 of the 33 papers meet the criteria of having multiple investigators. Whether or not the investigations are truly collaborative in that they meet the criteria set forth earlier cannot be determined from simply looking at an abstract.

It is important to mention that nurses have had a long tradition of being involved in group research, but the roles they have assumed have frequently been quite limited. These include being data collectors or having been involved in the intervention. Participation in the intervention may entail either providing part of the care that is being assessed or being the subject of observation. Nurses also frequently assume the role of coordinator of the care processes. Much less frequently

nurses have been identified as paid consultants, as principal investigators, or as co-principal investigators--roles where they provide expertise or are active in development of the design and conduct of the inquiry.

For the last several years I have had the opportunity to review a large number of research grants as a member of various governmental and foundation peer review panels. Unfortunately, in my experience, it is rare to see nurses listed as co-principal investigators in projects submitted by physicians or principal investigators from other disciplines. Likewise, in projects with nurses as principal investigators, it is rare to see co-principal investigators from other disciplines. We can, however, take some comfort in an increase in the number of projects in which a nurse is a principal investigator and another nurse is identified as a co-principal investigator, suggesting that group research and perhaps collaborative research may be increasing within the discipline. I am, of course, only one observer and do not have data to provide a firm estimate of the proportion of all projects submitted that would meet the criteria for group or collaborative research.

Characteristics of Successful Collaborative Research Groups

Based on their experience in working with collaborative research groups, Krueger, Nelson, and Wolanin (1978) have described such groups as possessing the following characteristics: well-stated goals; adequate resources to attain the goals; a division of labor that coordinates and integrates members' activities; and mechanisms to provide for the satisfaction of members' needs for tension management, status, and self-respect. In addition to such structural characteristics, I would add that the social psychological climate of the group is extraordinarily important.

Research groups may be composed of very strong individuals who are used to making their own decisions. Such individuals may have difficulty in a group situation due to a lack of experience and/or an unwillingness to concede to group level decision making. In this contest power struggles may develop. To establish and maintain functional groups, several conditions are important. First, investigators should have mutual trust in one another as professional colleagues. Second, it is essential to have open patterns of communication among members of the group. Third, it is important to have consensual decision making on: the specification of goals, the setting of priorities, a division of responsibility that utilizes the strength of group members, and the provision of rewards. Fourth, there need to be mechanisms for the reaffirmation of shared values and interests.

One reason for entering into a collaborative arrangement is to have people with different but complementary skills working together in an effort that could not be achieved alone. Thus, there is a delicate balance between the specialized interests and abilities of individual group members and the group's overall focus and goals. In a paper on the division of labor in small groups, Baker (1981), a social psychologist, hypothesized that to the extent the tasks in a group are specialized, the members become more dependent on each other and the level of cohesion increases. But, if there is too much task specialization, group members may feel isolated from each other and cohesion is lower. He further hypothesized that isolation in a group where individuals are specialized can be offset by fostering a strong collective identity or a high level of interaction. While Baker's hypotheses need further testing, the messages are that group identity is an important issue; group members need to see a need for each other; and group members need to want to work with each other.

What to Think About in Considering Initiation of a Collaborative Research Project

There are three matters to which one should give attention when considering the possibility of a collaborative endeavor. They are: the nature of the research problem, one's own characteristics, and the characteristics of potential collaborators. With regard to the nature of the research problem, it is important to ask whether it is necessary to work with another person because of the need for their conceptual or methodological expertise. Or, is working together deemed desirable simply because of mutual interest in a particular question and the benefits of colleague stimulation? Those of us who have had an opportunity to work in successful collaborative relationships have experienced situations in which the team has been able to be creative in identifying problems and arriving at understandings and solutions that probably would not be possible for an individual working alone. Krueger, Nelson, and Wolanin (1978, p. 24) described this process in the following way: "A challenging idea presented to an individual at a particular moment may elicit a creative thought that normally would be dormant. In turn, this expressed thought may spark an idea in another, and then another, in what becomes a chain reaction. The stimulation may come from reinforcement of similar beliefs or from being forced to consider different viewpoints held by members with diverse experience, knowledge and temperaments."

In considering one's own characteristics the following questions, several of which were suggested by Dishrow (1982), are important to ask before entering into a collaborative relationship. First, am I open to the views of others? Am I able to expose my ideas and work to others—to take criticism and to profit from it? This is commonly referred to as having a thick skin. While such a characteristic may be difficult to acquire, it is essential. Do I have a sense of humor? And, am I willing to share with others in a democratic mode?

In considering the characteristics of potential collaborators, it is important to determine how such individuals measure up on two sets of attributes. Potential collaborators should be perceived as sharing similar values and interests, being trustworthy, being capable of open communication, having initiative, and being reliable and able to meet commitments. It is also desirable that they be creative and enthusiastic.

Tradeoffs

In conclusion, I think it is important to indicate that there are tradeoffs involved in engaging in collaborative work. On the one hand, engaging in a collaborative activity may allow one to address questions one could not handle alone. On the other hand, it is necessary to give up some independence in decision making. For example, if one is working with several investigators in a large community survey each may have a set of questions they wish to ask. To have a manageable questionnaire, it may be necessary for each investigator to compromise and drop several treasured questions. Thus, while one may have the stimulation of group interaction on the positive side, one must also abide by group decisions.

Other decisions involve who will have priority in the use of resources, who presents the research and where, who publishes what and where, and the order of authorship. These are all important issues and their successful resolution is highly dependent upon the presence of appropriate conditions for collaborative work, the structural arrangements for working together, and the interpersonal climate. In the final analysis, each participant has to contribute to the group and be perceived as making a valued contribution. When group members are seen as redundant, problems will develop in the allocation of resources and in meeting with the mutual needs of individual members.

Collaborative research is not for everyone. Most of those with whom I have discussed this topic conclude that the benefits outweigh the difficulties. They add, however, that on subsequent projects they will be more cautious as they make decisions about with whom to work and the arrangements that will guide their joint activity.

In my view it is imperative that nurse researchers accept the challenge to develop truly collaborative research projects that exemplify healthy modes of interaction and produce quality research. The discipline needs the knowledge generated by such projects; the discipline also needs the opportunities for the socialization and mentoring of developing researchers such projects can provide.

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ETHICAL ASPECTS OF COLLABORATING WITH CLIENTS

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Gadow (1980) identified the nurse as uniquely qualified among health professionals to serve as a client advocate and discussed the importance of advocacy in determining nursing's future directions. According to her concept of advocacy, the nurse and client "freely decide" (p. 81) the exact nature of the nurse-client relationship, which can include the option of having the client serve as colleague.

Just as nursing practice involves nurse-client interactive roles, nursing research can be conceptualized in terms of researcher-subject interactions and relationships (Denzin, 1978). Both types of interactions are guided by ethical standards guaranteeing rights of clients or subjects to make informed decisions about their care or their participation in research studies (Damrosch & Lenz, 1984). It is reasonable, therefore, to extend Gadow's (1980) idea of client advocacy to the research context. This report outlines methods by which nurse researchers can serve as advocates by collaborating with client-experts in making decisions about important aspects of clinical research.

Clients who experience illness or other aversive life experiences may gain a perspective that nurses and other health professionals may lack. For example, see studies by Lauer, Murphy, and Powers (1982) and by Adom and

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Wright (1982) on how nurses as "outsiders" misperceived the needs and priorities of cancer and ophthalmological patients, respectively. Collaboration with clients who are uniquely qualified because of their perspective as "insiders" can help researchers avoid such misperceptions.

Active involvement of such clients in the planning of research is encouraged to accomplish the five-fold purpose of (a) tapping this source of client expertise, (b) allowing client-experts to serve as advocates of the research rights of their respective groups, (c) enhancing the social relevance of nursing research, (d) insuring greater respect for clients and subjects by making the researcher sensitive to their unique needs and requirements, and (e) increasing the likelihood that research findings will be implemented by and/or with respect for the target population. This kind of involvement would be particularly appropriate when research involves sensitive issues, or studies subjects at particularly vulnerable periods in their lives.

One example of a research effort which actively incorporated clients as advocates and advisors is a study of parents' psychological reactions to the loss of their infant due to Sudden Infant Death Syndrome (SIDS) directed by Dr. Camille Wortman at the University of Michigan. A unique feature of the project was the establishment of a research advisory board consisting of parents who had suffered a SIDS loss. The researchers solicited input from these parents during the earliest planning stages of the study. As a result, the research questions for the SIDS project stemmed not only from a review of the literature, but also from conversations with parents who were consulted as experts on the psychological aspects of the SIDS tragedy. This parental advisory group served as a conduit of regular feedback during all important phases of the research process.

A group of researchers (Lesley Perry, Lynn Nalven, and Shirley Damrosch) at the University of Maryland School of Nursing have successfully collaborated with a panel of client-experts in planning and implementing a

study of coping among parents of infants with Down's Syndrome (DS). These experts are parents of children with DS. (See Damrosch and Lenz, 1984, for details on the recruitment of this panel.) The major accomplishments of this collaboration include:

Validation of the study focus. The parents' encouragement and enthusiasm reinforced the researchers' decision to focus the study on parental coping.

Increased sensitivity to the needs and emotions of subjects. The input of the parental advisors was instrumental in making the researchers sensitive to possible problems in a number of ways. First, the advisors' early criticism led to the avoidance of wording in the interview that was in any way offensive. They aided the investigators in determining optimal sequencing of items in the interview schedule, as well as the time of the interviews. It was their unanimous view that the parents would be ready to be interviewed as early as two months after the birth of their infant.

Substantive contributions to instrument construction. The advisors not only critiqued items in the various instruments, but contributed items of their own. These items addressed dimensions of coping behaviors which the researchers had not previously considered and which were not included in previously published instruments.

Assistance with ethical considerations. The input of parent-experts helped assure that the rights of subjects were protected, benefits maximized, and risks minimized, because an additional perspective was added to the human subject review process. Moreover, their suggested additions served to enhance the potential usefulness of the study.

As a result of actually working with a panel of parental experts in the area of coping with the demands of rearing children with Down's Syndrome, the researchers became even stronger advocates for collaborating with client-experts, and make the following commendations:

1. More researchers, especially in sensitive areas of investigation, should seriously consider inclusion of a client-advisory panel in the planning and implementation of their studies. Such panels should be useful in improving the quality of research, enhancing its social relevance, and insuring that subjects are interviewed in the most sensitive and ethical way possible.
2. Input from client-advisors on the ethical aspects of proposed research could be an invaluable source of information for institutional review boards.
3. Client experts who perform services for researchers should be given honoraria as recognition of their contributions in much the same manner as professional consultants.

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THE ETHICS OF INTER-DISCIPLINE COLLABORATION

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The Definition of Ethics

I ascribe to the proposition that there is no ethics unless there is a decision. The decisions that we have been asked to consider are whether or not, and how to collaborate with members of another discipline to undertake a project. This requires an ethical analysis of the decision by identifying conflicting values and making a decision on the basis of the priorities we assign to each of these values.

Ethics of Professional Competence

Many of the values we hold are related to the professional competence that we recognize in ourselves, or in the person with whom we may collaborate. Each of us has a set of competencies that is unique to us as individuals, and a broader set that is unique to our profession. To be competent in the problems and subjects of your profession means that you are prepared, or experienced, in dealing with all the combinations and permutations of measurements, assessments, and problem solving within that area.

Each profession has a larger body of information and skills that it shares with other professions; we will call these borderlands of the profession. In these borderlands, we have not solved all the combinations and permutations. We recognize the opportunity for collaboration with another professional to obtain his or her help in the borderland in which there are shared skills and information. The values that should be explored

include: What are the unique skills and information available from the potential collaborators? How necessary are these skills and information to the completion of the task? If the problem lies in the borderlands of two or more professions, is it susceptible to solution by collaboration?

Professional Relations Within a Profession or Agency

There are values achieved by working within a single profession that are not as accessible in collaboration outside of a single profession or organization. Within a single profession there tends to be team work organized in a hierarchy of functions. Tasks are delegated vertically to members of the same discipline or specialty. Budgets are prepared with the priorities held in common by the participants. Prestige and awards are granted according to the standards of the specialty. Consideration of causes is usually limited to those of interest to that specialty. Communication between members of the same discipline uses the same jargon and proceeds with accepted assumptions. Procedures, measurements, and records are carried out and completed by the newest member of the profession.

These characteristics of work within one department support the professional person's unique store of information and skills. With all of these benefits derived from work within a department, why should a professional person venture into work in which the information and skills are shared by other disciplines, specialties, or departments? Why accept delegation of responsibility by someone who is equal to you in their training on the subject, or by someone who is not part of your own profession? Why deal with multiple causes that are the interest of multiple disciplines when a necessary or sufficient cause is well known by your own specialty? Are you willing to sacrifice your dependence upon your supervisor to gain autonomy in a democratic process? Do you strive for creativity that comes from "cross

fertilization" with someone different from you? These are the vulnerabilities and the opportunities of investing your efforts in collaboration with a professional person who shares an information base and skills that are not typical of the cores of either profession.

Collaboration Between Members of Different Professions Within Borderlands of the Two

Collaboration represents an activity in which professional persons venture into subjects or fields for service, education, or research in which they were not fully trained in their profession. In these areas, there are ideas, methods, and facts still to be found to which other professions can contribute. The habilitation of retarded children, the developmental problems of teenage mothers, the multiple problems of impoverished families, the sudden infant death syndrome, the problems of family violence and child abuse are characteristic of the problems that have been submitted to collaborative efforts in the past 25 years to the immense benefit of the clients served and the collaborating professions. To accomplish this, physicians, nurses, social workers, statisticians, psychologists, and others had to venture out into services and subjects not fully delineated, much less understood. This suggests that there are values that we use to define our roles as professionals, and there are separate values to define our roles in collaboration on subjects and methodologies that are shared with other professions.

Highly Valued Qualities in a Collaborator

The process of collaboration does not deny the importance of the core training and experience of each professional. Competence is needed from each member of the team to contribute information and skills. If one person in one profession simply adds his or her own work

to that of another, it is like putting the pieces of a puzzle together. I would submit that this is only the first level of collaboration because it allows each individual to remain in his or her core competency and does not require reorganization of decision-making hierarchies to which the participating professionals belong.

The greatest opportunity for collaboration lies within the borderlands between the defined competencies of the separate professions. The qualities of professionals that are valued most in the borderlands are initiative, creativity, clarity of communication, scientific discipline, and enthusiasm. These are personal characteristics that are particularly useful in combined efforts for problem-solving or discovery. Since the nature of the eventual solution or of the future discovery may not be fully known, you cannot clearly predict which of the participating professions is going to make the greatest contribution. These personal characteristics of the participants provide the greatest assurance that progress toward the solution or discovery will proceed smoothly.

Ethical Goals to be Sought in Collaboration

Autonomy is highly valued in collaboration. The self-governance of the participants is the basis for democratic decision making in which each collaborator contributes according to his or her preception of the most effective or efficient means of reaching a shared goal. Autonomy is the basis for negotiation of a fair contract and democratic governance of the collaborative project.

Fairness is a major value for assigning tasks and for distributing rewards in the collaborative process. The basic test for fairness is to determine that a contribution or distribution is equally acceptable when it is given or returned to the other collaborator(s). Their collaboration requires that the rewards are proportional to the contribution, but further ethical analysis will reveal that this giving and receiving may be according to ability, investment, productivity, or need. Obviously, there is no

formula for fairness, but because it has multiple dimensions, the parameter chosen to determine fairness is very susceptible to negotiation among collaborators.

The concept of "relative advantage" is borrowed from economics. It states that when a commodity can be produced in many locations, the producers who can deliver the commodity most efficiently will receive the greatest reward. When tasks are being assigned in a collaborative project, the collaborator who can complete the task successfully with the least effort is the obvious person for the assignment.

Equality is a value related to autonomy and also contributes to the democratic process. In this instance, equality is determined by the goal of the project. It is an equality of opportunity to contribute, initiate, plan, coordinate, write, edit, or to convene colleagues for any of these activities. Rotation of these responsibilities between collaborators is a sure test of equality. By this test, we can isolate the collaborative functions and the consultative function from the professional core of the unique contribution of each professional.

Summary

Collaboration can be undertaken by autonomous professional persons who are oriented toward a task in service, teaching, or research. Their work has joint ownership, which includes the contribution of the experience, skills, motivation, and discipline of each individual, as well as the core of professional information and skills in which each is trained. The process of collaboration occurs in the borderlands of the two or more specialties involved and requires individual autonomy for democratic decision making in these borderlands where it is necessary to be creative for problem solving and discovery. The personal attributes of collaborators

must be those that will move the group effort toward their shared goals. Fairness in the assignment of tasks and in the distribution of rewards may be related to ability, effort, productivity, or need, but should be negotiated as part of the collaborative process. Efficiency is achieved by undertaking that task according to the relative advantage of one or more collaborators. The functions of initiating, coordinating, writing, editing, and convening may be fulfilled by any of the participants in the shared borderlands, and the rotation of these functions among participants is a test of their equality. Collaborative projects are sought by those who desire to solve problems or make discoveries in areas outside of the domains of single professions or specialties, who desire to assume autonomous roles in a democratic group in which the chain of command, vertical delegation of tasks, budgeting, awards, and prestige of their specialty are temporarily laid aside for a collaborative experience.

OWNERSHIP OF DATA AND PLAGIARISM IN RESEARCH

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In the health professions, collaborative research projects involving individuals with a wide range of skills, training, and roles are rapidly increasing in number and complexity. Given the proliferation of research conducted by teams, and the fact that records of research and publication are critical variables in determining one's status and position in the professional community, the ownership of data and the assignment of credit when publishing manuscripts have become salient issues.

Unfortunately, there is little clear-cut agreement among or within the various health professions regarding what is appropriate and inappropriate assignment of credit, especially in collaborative research situations where there are multiple and varied contributions made by individuals with different educational backgrounds, organizational status, and experiences in research.

This fact is reflected in the results of a study, conducted by Waltz, Nelson, and Bond, in which they surveyed a random sample of 400 health professionals in the fields of nursing (N), dentistry (D), medicine (M), pharmacy (P), and social work (SW), who had published in refereed journals in their respective fields between 1978 and 1980, to ascertain their views regarding the assignment of publication credit. Using a modified version of an instrument developed by Spiegel and Keith-Spiegel (1970), respondents were presented with 36 collaborative research situations, and suggested possibilities for authorship assignment. Scenarios addressed issues regarding:

- (a) using someone else's research idea;
- (b) the paid consultant;

- (c) the continuing research team;
- (d) the highly qualified sub-doctoral assistant, student assistant, and volunteer assistant;
- (e) professor-student collaboration;
- (f) multiple publications from a single study;
- (g) the research program administrator;
- (h) the pre-study agreement;
- (i) ordering of credits based on functions performed;
- (j) possible solutions to the multiple authorship problem.

Six areas in which agreement was evidenced among the various professions were, for the most part, related to instances in which credit for sub-doctoral and/or technical contributions come into play. Those areas in which agreement was not evident were more closely linked to research in the clinical area, to assignment of credit when respective contributions are equal, when status factors come into play, and when authorship order, other than first author, must be determined.

To illustrate the nature of the issues to be addressed, it is useful to examine responses to selected scenarios with particular relevance to the ownership of data and plagiarism.

First, consider the question: What credit, if any, should be given to the source of an idea which leads to a research study? Reactions were sought to the following situation by respondents:

Dr. Brown informally suggested a research idea to his colleague Dr. Smith. Dr. Smith then designed

an experiment based on this idea, added ideas of his own, collected data, analyzed the results, and wrote a paper for publication.

Published Sample (n= 185)

	Percent by Discipline					Percent <u>Total</u>
	<u>D</u>	<u>M</u>	<u>N</u>	<u>P</u>	<u>SW</u>	
A. He should give Dr. Brown a co-authorship.	5	8	4	0	3	4
B. He should give Dr. Brown a footnote, acknowledging the source of the idea.	31	42	30	35	66	41
C. Dr. Smith is under no obligation to acknowledge Dr. Brown as the source of the idea for the study.	8	3	22	17	6	11
D. He should have asked Dr. Brown to collaborate on the study.	56	48	44	48	28	45

In line with "asking Dr. Brown to collaborate," were many comments about the possible nature of the relationship between the two men and suggested possibilities for not collaborating. "Why hadn't" or "Why didn't Dr. Brown initiate the research?" were often asked. If Dr. Brown decided not to collaborate, comments suggested that it would still be courteous to acknowledge his contribution in a footnote.

Many comments elaborated on types of circumstances that would affect the credit that Dr. Brown should be given. The completeness of the original idea and the way Dr. Brown presented the idea were important considerations in determining the credit to be given.

If Dr. Brown had suggested in passing, "I wonder what happens if . . .," then his suggestion would be less

important than if he had a more concrete plan of action. Some of the diverse comments about ideas included:

"The idea is a rare and valuable thing. Conducting and reporting research are commonplace skills."

"Ideas come from many sources and many ideas require maturation and the source of the original impetus is not known."

"It is hard for me to imagine a research idea that does not change in development."

"Ideas are a dime a dozen."

Next, consider another scenario that addresses essentially the same question in a slightly different manner.

Dr. Jones consults with Dr. Frank regarding a research project Dr. Frank wishes to conduct at Dr. Jones' clinical agency. Dr. Jones informs Dr. Frank that he will explore the possibility with his staff and get back to him. A year later, Dr. Frank, who has not yet received Dr. Jones' response, finds a study in the literature by Dr. Jones which investigates the problem and employs the design proposed by Dr. Frank. When a formal complaint is lodged by Dr. Frank, Dr. Jones argues that Dr. Frank's thinking contributed to ideas he was already formulating, but not sufficiently enough to warrant credit or a collaborative offer. Furthermore, he contends that the study plan proposed by Dr. Frank had a number of flaws and thus required a great deal of effort on his part to make it viable.

Published Sample (n = 176)

	Percent by Discipline					Percent <u>Total</u>
	<u>D</u>	<u>M</u>	<u>N</u>	<u>P</u>	<u>SW</u>	
A. Dr. Jones is under no obligation ethically to acknowledge Dr. Frank.	0	3	0	13	0	4
B. Dr. Jones should have given Dr. Frank a footnote acknowledging him as a source of the idea.	16	13	11	11	19	14
C. Dr. Jones should have asked Dr. Frank to collaborate on the study.	82	78	85	70	81	78
D. Dr. Jones should have given Dr. Frank a co-authorship.	3	6	4	6	0	4

The majority of respondents agreed that Dr. Frank should have been asked to collaborate. However, the respondents felt that if Dr. Frank had not followed up on the initial proposal within a year, he really had no recourse. It was also suggested that the original proposal should have been made in writing. Several respondents also indicated that if Dr. Jones had really been gearing up for such a study, he should have indicated these preparations at their meeting.

Yet another dimension of issues regarding using some one else's ideas, where agreement was more evident, relates to the question: Who holds the ultimate responsibility for assuring that collaborative research is conducted in an ethical manner?

Professor Bright requests that Mr. Smith, a graduate student, conduct a literature review. Mr. Smith delegates portions of the task to three of his undergraduate students. Professor Bright publishes the resulting article with Mr. Smith. Subsequently, Professor Ross lodges a

formal complaint stating that the work published by Professor Bright and Mr. Smith contains verbatim passages from his work and that his work is not acknowledged anywhere in the article. Professor Bright faults Mr. Smith, who, in turn, faults the three undergraduate students.

Published Sample (n = 178)

	Percent by Discipline					Percent Total
	<u>D</u>	<u>M</u>	<u>N</u>	<u>P</u>	<u>SW</u>	
A. Professor Bright, as senior author, is ultimately accountable and responsible for assuring that the work was completed in an ethical manner, even though he delegated a portion of his work to Mr. Smith.	19	36	15	32	27	26
B. Professor Bright and Mr. Smith as co-authors are accountable and responsible for assuring that the work reported by them was completed in an ethical manner.	70	58	70	54	64	62
C. Professor Bright and Mr. Smith were ethically responsible for their work and thus should not have delegated tasks but rather should have conducted their own literature review and written their own report.	8	0	15	8	9	8
D. It is unreasonable to expect authors to assume responsibility for all tasks completed during the conduct of a study and accountability must be placed with those responsible for a task.	3	6	0	6	0	4

Respondents agreed that the authors are responsible for the ethical conduct of the work; 70 percent extend this responsibility to both authors, while 26 percent would limit it to the senior author.

Reading of the literature for a review article by those who wrote the article was considered an important determinant in this situation. The researchers should be cognizant of important researchers in the area and the nature of their work and, thus, are able to acknowledge research appropriately.

Literally, by definition, plagiarism means to steal or pass off the ideas or words of another as one's own; to use a created production without crediting the source; to commit literary theft; to present as new and original an idea or product deriving from an existing source (Webster, 1977).

It is interesting to note that while agreement was evident in response to the scenario relating to using verbatim passages from another work in an article, i.e., to commit literary theft; responses regarding what constitutes plagiarism during the formative stages of a research project, i.e., using someone else's ideas, were less in agreement and subject to a number of qualifications.

Now consider the following questions regarding ownership of data: Should a principal investigator who administers a grant comprised of many individual studies claim ownership of data and receive authorship on resulting manuscripts? Is it ethical for professors to establish a policy whereby they will not chair a student's thesis or dissertation committee unless given authorship on any publication resulting from the effort? What credit, if any, should be given to a professional in a clinical agency without whose assistance subjects might not have been readily available?

Dr. Ebal, a well known researcher whose career has advanced to the point where he acts primarily as the administratively responsible investigator for many research studies (and who has several researchers and technicians working under his supervision), demands that all publications arising from his program bear his name as an author even though he does no work on the projects and never does more than read the manuscript.

	Published Sample (n = 176)					Percent <u>Total</u>
	Percent by Discipline					
	<u>D</u>	<u>M</u>	<u>N</u>	<u>P</u>	<u>SW</u>	
A. Dr. Ebal should not even receive a footnote, because he never actually makes any contribution to the studies.	30	39	33	21	33	28
B. Dr. Ebal should receive only footnote recognition.	32	23	19	37	61	35
C. This policy is warranted as long as Dr. Ebal is the last author listed.	32	45	41	42	6	34
D. Dr. Ebal is entitled to senior authorship on all manuscripts if he demands it.	5	3	7	0	0	3

Respondents were about equally divided on no credit, footnote, or last author for an administrator who made no substantive contribution to a particular manuscript.

Comments speculated on the nature of the administration and funding. If Dr. Ebal secured funding as the principal investigator, then respondents felt he should receive author credit. If the funding was secured by the researchers responsible for the project, then no credit was deemed necessary and footnote credit was considered a courtesy.

Some consideration of Dr. Ebal's contribution to the research efforts of the lab in the way of ideas and efficient management was also mentioned.

A policy of being named second author on all publications stemming from students' theses or dissertations was considered unethical by 63 percent of the respondents to the following situation.

Dr. White has as one of his job responsibilities the direction of graduate students' research. Dr. White has established a policy whereby he will not chair a student's thesis or dissertation committee unless the student agrees to name him as second author on any publication resulting from the student's research efforts.

	Published Sample (n = 176)					Percent <u>Total</u>
	Percent by Discipline					
	<u>D</u>	<u>M</u>	<u>N</u>	<u>P</u>	<u>SW</u>	
A. This is an unethical practice that needs no qualification.	49	31	50	38	71	47
B. This is an unethical practice since the direction of student research is a specified function in Dr. White's job description.	16	22	31	6	12	16
C. This practice is ethical only if Dr. White assumes responsibility for the design and conduct of the study beyond the involvement expected by the job description.	27	41	15	42	18	30
D. This is an ethical practice that needs no qualification.	8	6	4	15	0	7

The extent of the professor's contribution is again the determining factor in extending authorship credit.

Many respondents commented that a practice such as this was an abuse of the professor's power and expressed concern for students who might have no alternative in selecting an advisor.

If Dr. White assumed responsibility for the design and conduct of the experiment (Answer C), then 30 percent of the respondents would consider the practice an ethical one. Several comments mentioned research in the physical sciences where student dissertations are often the outgrowth of a professor's laboratory research; in such situations, second authorship seems to be a routine and accepted practice.

A researcher's ethical obligation to a colleague who provides assistance and access to subjects for data collection is considered in the next situation.

Dr. Blue conducted clinical research at a local mental health agency. A staff member in the agency helped Dr. Blue gain entry to the agency and assisted in the collection of observational data over a 6-month period. The staff member did not contribute to the design of the study.

Published Sample (n = 185)

	Percent by Discipline					Percent <u>Total</u>
	<u>D</u>	<u>M</u>	<u>N</u>	<u>P</u>	<u>SW</u>	
A. Dr. Blue should acknowledge the staff member's assistance in a footnote.	74	69	78	82	88	78
B. Dr. Blue should name the staff member as junior author.	26	28	15	14	9	18
C. Dr. Blue has no obligation to acknowledge the assistance of the staff member.	0	3	7	4	3	3

The majority of respondents agreed that footnote credit would be appropriate. Comments were about equally divided between footnote credit and author credit. The uniqueness of the situation and the availability of other sources of subjects for the research were mentioned as factors in such a decision. "Courtesy to colleagues is always a reason for at least acknowledging their contributions."

In general, responses indicated that many factors including, but not limited to, status, position, nature, and extent of one's contribution to the research determine one's views on ownership of data. It appears that issues to be resolved in this area focus primarily on questions regarding who, and under what circumstances, should be granted ownership of the types acknowledged by junior authorships, and footnotes.

The obvious lack of agreement among the respective health professionals represented in this study, suggests that much work needs to be done before inter-professional research collaboration can occur in a manner satisfactory to all involved.

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MODELS FOR MULTIVARIATE EFFECT SIZE ESTIMATION IN CLINICAL NURSING RESEARCH

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With the current trend in nursing to approach human phenomena from a holistic perspective, there is a concomitant need to develop multivariate statistical procedures that allow for the full incorporation of this perspective into the various types of nursing research. This issue is particularly pertinent in light of the current proliferation of nursing research findings, and the consequent exigency to summarize and synthesize these findings into distinct bodies of empirical nursing knowledge. The purpose of this paper is to present and discuss models for multivariate meta-analytic procedures in nursing research.

One of the major problems confronting nursing research today may be the challenge of translating the principles of the holistic approach to human phenomena of health and illness into holistic research paradigms. Regrettably, nurse researchers, while supporting a holistic perspective and operating within such framework, have for the most part employed univariate statistical procedures to analyze univariate designs and answer univariate questions. In other words, while acknowledging that multiple factors are operative in the occurrence or non-occurrence of human phenomena of health and illness, nurse researchers have failed to address these factors as such. Studies have either tended to focus on one isolated factor, or to collapse the

multivariate entity of multiple factors into the singularity of one, univariate factor. Such strategies, while noble in cause, nonetheless reduce the multidimensionality of nursing and health to the unidimensional sphere.

A similar univariate orientation is discernible in the statistical paradigms proposed for summarizing and synthesizing research studies in concept formation and theory building (Glass, 1976; Hedges, 1982, 1983; Rosenthal, 1983; Rosenthal & Rubin, 1982; O'Flynn, 1982). Yet Abraham and Schultz (1983), noting the discrepancy between the holistic framework and the univariate models, called attention to the need for nursing (as well as for the other health and social sciences) to develop multivariate statistical models for meta-analytic effect size estimation.

Three models for such meta-analysis of nursing research are presented, the differentiation between models being based upon the number of methods/instruments $m_{j,i}$ used to measure factors f_i . For the purpose of illustrating each model, examples from a hypothetical set of studies on the post-mastectomy well-being of breast cancer patients are used.

- (a) Model 1: Multifactor-Unimethod, in which in k independent studies, each factor f_i is measured by one method $m_{0,i}$. Assuming well-being consists of three factors (psychological, physical, social well-being), this first model would be appropriate in the effect size estimation of studies that utilize one specific method/instrument for each factor, thus yielding a design comprising three methods/instruments $m_{0,1}$, $m_{0,2}$, and $m_{0,3}$ to measure factors f_1 , f_2 , and f_3 , respectively.
- (b) Model 2: Balanced Multifactor-Multimethod, in which, in k independent studies, each factor f_i is measured by an equal number of methods $m_{j,i}$,

(with $i = 1, \dots, p$). Whereas the first model applied to k multivariate studies with univariate measurements of factors f_i , this second model defines procedures for estimating the effect size of the vector of factor effects $(\epsilon_1, \epsilon_2, \epsilon_3)$ when a fixed number p of measures is utilized.

- (c) Model 3: Unbalanced Multifactor-Multimethod, in which, in k independent studies, each factor f_i is measured by an unequal number of methods $m_{j,i}$ (with $i = 1, \dots, p$). Designs to which this model applies comprise at least one factor f_i measured by multiple methods/instruments $m_{j,i}$ (thus, $j > 2$), and at least one factor f_i measured by a sole method/instrument $m_{0,i}$.

The paper concludes with a discussion of the advantages of multivariate meta-analysis effect size estimation in nursing theory development, and with a delineation of the cautions that are necessary in applying the proposed strategies.

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NURSING ADMINISTRATION IMPLICATIONS OF THE RELATIONSHIP OF TECHNOLOGY AND STRUCTURE TO QUALITY OF CARE

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For years organizational theorists have proposed that the fit between the technology of an organization and its structure can be linked to organizational effectiveness (cf, Child, 1972; Harvey, 1968). This study investigated the linkage between the dimensions of technology and structure on nursing subunits to the effectiveness of these subunits in terms of quality of nursing care.

Thirty-four nursing subunits in three general hospitals participated in the study with complete data obtained on 27 subunits. A total of 187 nursing personnel and 340 patients were included in the study. Nursing personnel included the head nurse and one to five nursing personnel from each subunit, representing an 81 percent response rate. Patients were randomly selected from those who met the criteria established for the study with 7 to 20 patients participating on each subunit.

Technology was defined as the acts employed by nursing personnel to change individuals from being hospitalized to being discharged and was measured using the Overton, Schneck, and Hazlett (1977) 34-item, 5-point Likert-like instrument. Three dimensions of technology emerged through factor analysis: instability, variability, and uncertainty. Reliability coefficients for the dimensions in this study were .86, .77, and .81, respectively.

Structure was defined as the allocations of work roles and administrative mechanisms to control and integrate work activities. It was measured by the 21-item, 5-point Likert-like instrument employed by Leifer and Huber (1977) to measure flexibility of structure. This instrument was developed from the empirical findings of

Duncan (1971). Factor analysis of this data produced three dimensions of structure: vertical participation, horizontal participation, and formalization. Reliability coefficients for the dimensions were .74, .63, and .60, respectively.

Effectiveness was defined as the quality of care delivered on nursing subunits and was measured using the Rush-Medicus Nursing Process Monitoring Methodology (Hegyvary, Haussmann, Kronman and Burke, 1979). This instrument measures quality in six dimensions: the nursing care plan, attention to physical needs, attention to non-physical needs, evaluation of care, protection of patients, and administration of the delivery of care. Data were obtained from a variety of sources on the nursing subunit on different days of the week and different hours of the day. The two pair of Registered Nurse observers who collected the data achieved interrater reliabilities of .88 and .92.

Data were analyzed by calculating fit variables, which were the absolute value of the differences between the combination of the technology and structure factor scores. Regression analysis, using the three most significant differences as independent variables, produced a significant model ($F = 8.28$, $P .001$) that explained 52 percent of the variance in quality of care. Interpretation of this model suggested that nursing units which have high technological instability and require frequent nursing observations and technical monitoring should use a structure that has low vertical participation in which superiors do not often seek out their subordinates in decision making. Nursing units with greater technological variability, characterized by varying patient diagnosis and problems, should develop a structure that allows more horizontal participation denoted by positive attitudes toward the involvement of personnel in decision making and in the definition of tasks. Finally, nursing units with more technological uncertainty, suggested by complex nursing problems,

should employ a structure containing more rules and regulations to produce higher quality nursing care.

These results indicate that nursing administrators should look at the technological aspects of a nursing subunit prior to making decisions concerning the structural characteristics of that subunit. These structural characteristics could include staffing patterns, coordination with other departments, and decision-making patterns.

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GRADE INFLATION: A STUDY WITHIN ONE ASSOCIATE DEGREE NURSING PROGRAM

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This study sought to determine if there is grade inflation in one associate degree nursing program, and if there is, to compare it to grade inflation found on campus in the College of Arts and Sciences. It has been frequently reported in the literature that academic grade inflation has occurred in the higher education classroom during the past two decades (Dietman, 1981; Eldridge, 1981; Ferritor, 1981; Handleman, 1980; Juola, 1979; Prather, 1979; Suslow, 1977).

The study used three time-line groups of grades and two divisions of courses. The three time-lines (T-L) established were:

T-L Group I:	1971-1973
T-L Group II:	1974-1977
T-L Group III:	1978-1981

The division of courses were: nursing (individual courses and total courses) and arts and sciences (total courses, science courses, and upper division courses). Comparison was made by individual courses, grouped courses and T-L groups. Variables examined were:

1. Number and percentages of grades in nursing courses by T-L group and by course.
2. Percentage of grades given in each nursing course (all T-L groups).

3. Total number and percentage of nursing grades by T-L groups.
4. Grade point average by T-L group and nursing course.
5. Grade point average by T-L group and non-nursing courses.

To compare the Associate Degree Nursing Program grade inflation with the College of Arts and Sciences grade inflation, mean grades on nursing courses and non-nursing courses by T-L groups were utilized. Variables examined were:

6. Grade point average of non-nursing courses by T-L group.
7. Pre-nursing and graduate grade point average by T-L groups.
8. Selected general education courses grade point average by T-L group.
9. Nursing student T-L groups by: (a) non-nursing grade point average; (b) nursing grade point average; (c) College of Arts and Sciences: all student grade point average; (d) College of Arts and Sciences: upper division grade point average.

A comparison was also made of:

10. American College Testing Assessment (ACT) (Lindquist, McCarrell, & Tyler, 1959) composite scores by T-L groups of all entering university students and associate degree nursing students.

The population was the 556 graduates from the Associate Degree Nursing Program from 1972 through

1981. The College of Arts and Sciences study used a sampling from three T-L groups to examine three categories of courses. The results were accepted as representative of the arts and sciences student population and compared with data from the total population of nursing students.

The number and percentages of grades (A, B, C, D, F, WF, WP) for each nursing course in the three T-L groups were calculated. From the data the following characteristics emerged:

As students progressed through the nursing sequence there were more Bs in all semesters; more Cs than As in the first semester; more As than Cs in the fourth semester. The second semester tended to have a higher number of As and Bs than the third semester.

Progressively through the T-L groups nursing courses had more As, more Bs, and fewer Cs.

T-L Group I had the lowest nursing grade point average of 2.70, T-L Group II had an intermediate grade point average of 2.85, and T-L Group III had the highest grade point average of 2.94.

In non-nursing courses T-L Group I had the lowest grade point average, and T-L Groups II and III were progressively higher. Nursing course grades increased by a total of .24 grade points; non-nursing course grades increased by a total of .15 grade points.

Graduate grade point averages of all three T-L groups showed an increase over pre-nursing grade point average by group.

Comparison was made of sample data from the College of Arts and Sciences study using grade point

averages of all students, grade point averages of upper division students, grade point averages of pre-nursing students, and grade point averages of nursing students. The results were as follows:

Grade point averages in all categories increased progressively by group.

Non-nursing courses taken by nursing students showed the least increase, probably due to the heavy science component which also showed less inflation in the arts and sciences study.

College of Arts and Sciences grade point average of all students showed the greatest increase.

Comparison of ACT composite scores of T-L Groups II and III (ACT was not used during the Group I T-L) showed a drop of nursing students' ACT composite scores from above the total university average to below the university average.

Summary

The study revealed that from the first T-L group to the last T-L group there was consistent moderate nursing classroom grade inflation. Throughout the T-Ls there was consistent moderate inflation in every nursing course. Within each T-L there was grade inflation from the first through the last nursing course with the exception of a grade point drop in the third semester nursing course. Nursing grade inflation tended to parallel the College of Arts and Sciences grade inflation.

Further studies are needed to determine whether nursing course grade inflation is present throughout the nation. If this is true, research should be conducted to determine if there is inflation of the national licensure examination scores.

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A SURVEY TO DETERMINE WHAT NUTRITIONAL INFORMATION MIDDLE-CLASS WOMEN RECEIVE DURING PREGNANCY

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This study investigated the type of nutritional information and methods being used to counsel middle-class pregnant women. Generally, clinic patients attend special classes in which nutritional information is provided. A review of the literature revealed that middle and upper socioeconomic groups of women may not be receiving adequate nutritional counseling (Feigenberg & Schiller, 1977). Concern about excessive weight gain may lead some women to severely restrict food intake during pregnancy at a time of rapid fetal growth and increased maternal and fetal energy requirements (Shearer, 1980). Since there is substantial evidence indicating that there is a relationship between maternal dietary habits and pregnancy outcome (Winick, 1969), the purpose of this study was to examine the methods of nutritional counseling, the time during pregnancy when counseling was initiated, and the effectiveness of dietary practices as measured by maternal weight gain and birth weight.

The sample consisted of 155 private maternity patients who were studied within 2-6 days following delivery in two suburban hospitals in the Baltimore-Washington area. Data were obtained by administering a questionnaire consisting of two parts. Part I concerned general demographic information and information about their pregnancies, such as weight gain, medical problems and type, as well as methods and sources of nutritional

counseling. Part II addressed dietary practices during pregnancy, knowledge of optimal nutritional consumption, instruction received about recommended nutritional consumption, and instruction received about recommended nutritional requirements during pregnancy.

Frequency distributions and summary statistics on the demographic data and other variables on Part I of the questionnaire were obtained. Pearson correlations assessed patterns of relationships. Chi-square and Cramer's V were used to assess relationships between nutritional practice, knowledge, and information received.

Analyses revealed that the majority of respondents (139) indicated they did receive information about nutrition in pregnancy from their physicians. Most respondents received information during the first month (42.6 percent) and the second month (27.1 percent) of pregnancy. The average weight gain of the sample was 31.2 pounds; the average birth weight was 7.6 pounds. The data revealed a correlation of .17, ($p = .03$) between weight gain of the mother and weight of the newborn. There was also a significant correlation between total weight gained during pregnancy and weight gain recommended by physicians ($r = .30$, $p = .01$). A series of chi-square computations employed to test relationships between practices, knowledge, and information revealed that, on the average, subjects followed directions on number of servings within each food category when given the information.

Some implications from this study are that nurses should be alert to the importance of nutritional counseling early in pregnancy and should indicate this to clients and physicians. The physician's nurse or nutritionist could assume the role of patient educator during early pregnancy. Childbirth education classes should be expanded so that early pregnancy classes could be conducted with emphasis on nutrition.

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STRESS, TRUST, AND MISTRUST IN NORMOTENSIVE, HYPERTENSIVE, AND HEART DISEASE PERSONS IN AN EXERCISE PROGRAM

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The concept of "stress" has come into increased prominence since World War II. The term is broad and covers phenomena at the physiological (Selye, 1956), psychological (Lazarus, 1966), and social (Smelser, 1963) levels of analysis which may be described in terms of etiological intervening processes and effects. One of the effects of stress is coronary heart disease.

Coronary heart disease is one of the most serious threats to the nation's health as well as to its economic toll. A precursor to heart disease is hypertension. The world created by the Industrial Revolution necessitates reliance on others for many needs. Many decisions involve the necessity to trust others which is a potential source of stress. The Industrial Revolution also created a world in which it was possible to lead sedentary lives. Coronary heart disease, hypertension, and anxiety are among the problems arising from sedentary life styles. Only recently has the realization that exercise is necessary to maintain a high level of health become evident. The purpose of this investigation was to determine if a relationship exists between non-specific stress, trust, mistrust, and selected demographic variables in normotensive, hypertensive, and heart disease persons participating in an exercise program.

A non-probability sample of 64 volunteers was used which consisted of 20 subjects with heart problems, 18 with hypertension, 22 with normal blood pressures, and 4 with both heart problems and hypertension. There were 30 males and 34 females in the sample.

The design was ex post facto. Instruments used were the Psychiatric Epidemiology Research Interview (PERI) developed by Dohrenwend and co-workers (1980) and Rotter's (1967) Interpersonal Trust Scale (ITS). The PERI has .90 reliability; assessments developed by Vernon and Roberts (1981) were used for additional reliability and validity determinations. The ITS is a 40-item additive scale which utilizes a Likert-type format and has a test-retest reliability of .68. The ITS has been validated in laboratory settings, with questionnaires, self-reports, and peer ratings (Wright and Maggied, 1975).

Participants signed in each day as they arrived for exercise in a university gymnasium. There was a 10-minute warm-up period. Blood pressure and heart rate were checked before and immediately after warm-up. Walkers and joggers began in a clockwise direction and changed to counterclockwise at half-time. Post-exercise blood pressures were taken at the end of exercise, before cooling down. The period of exercise was one hour. Subjects completed the PERI and ITS at one sitting. Pearson's correlations were utilized to determine relationships.

Alpha reliability coefficient for the PERI with this sample was .83. A statistically significant relationship was found between the scores of subjects on the distrust scale and nonspecific psychological distress (stress) $r_{62} = .85$ (72 percent). A statistically significant relationship was found between trust and education $r_{62} = .36$ (13 percent), between trust and retirement $r_{62} = .34$ (11 percent), and between heart disease and sex $r_{62} = .45$ (20 percent). A statistically significant inverse relationship was found between heart disease and education $r_{62} = .36$ (13 percent), and between trust and age $r_{62} = -.34$ (11 percent).

If mistrust is a source of stress, the efforts to foster trust should be taken. If an exercise program is beneficial, the benefits could be evaluated in terms of medical costs averted, future earnings saved, and increased life expectancy. An exercise program as described with concomitant social support could increase levels of trust among participants.

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PERCEPTION OF NURSES' EXPERT POWER BY NURSES AND PHYSICIANS

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Nurses make up the largest group in the health care system; however, nurses traditionally have not been identified as having power in the system. The lack of power nurses hold in the health care system limits the role nurses have in the system and influences the effectiveness of the delivery of health care.

This study concerned the expert power base of nurses as perceived by nurses and physicians. The purposes of the study were to: (a) explore the expert power base of professional nurses as perceived by physicians and nurses; (b) determine the relationship of level of nursing education on nurses' perceptions of professional nurses' expert power; and (c) determine the differences in physicians' and nurses' perceptions of the expert power base of professional nurses. French and Raven (1959) defined expert power as the special skills and knowledge possessed by an individual.

The study was descriptive and data were collected by surveying 200 nurses and 200 physicians randomly selected from those licensed to practice in a Southeastern state. A questionnaire, "Measure of Skill and Knowledge of Professional Nurses," developed by the researcher, was mailed to the subjects. The instrument measured perceived skills and knowledge of professional nurses in four areas--technical skills, psychosocial knowledge, communication skills, and community planning skills. Six nurses and five physicians participated in a pilot study to establish content validity for the instrument. Construct validity was established for the scales by computing a factor analysis on the study data. Scales were revised by

including items which loaded $\geq .40$ after varimax rotation. The revised instrument had 52 items--13 for technical skills, 11 for community planning skills, 13 for psychosocial knowledge, 9 for communication skills, and 6 atypical items were included to insure reader reliability. The reliabilities for the scales ranged from $r = .87$ to $r = .92$.

Expert power scores were analyzed using a two-tailed t test. Both technical and professional nurses identified an expert power base for professional nurses on all four scales of the instrument; however, professional nurses perceived they had more expert power in the psychosocial knowledge and communication skills areas than did technical nurses ($p \leq .05$).

A significant difference ($p \leq .05$) was found between the perceptions of both nurses and physicians of the expert power base of professional nurses. Nurses perceived that professional nurses had more expert power on all four scales than did physicians. Physicians perceived that professional nurses had expert power in the areas of technical skills, psychosocial knowledge, and communication skills.

The perception by nurses and physicians that professional nurses had an expert power base should improve the utilization and retention of professional nurses in the health care system. The role professional nurses have in making decisions regarding the health care system should increase. If nurses are perceived as having power, they will use power and resist power attempts from others (Jacobson, 1972).

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DIRECT OBSERVATION OF PARENT-INFANT RESPONSIVENESS IN NURSING RESEARCH: THE NURSING CHILD ASSESSMENT FEEDING SCALE

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In clinical practice, teaching, and in conducting research, the goal of the maternal-child nurse is to achieve improved health care for mothers, infants, and children. One assumption for the goal is the "expressions of health and illness that can be operationally defined have identifiable behaviors, lend themselves to modification and measurement, (and) form the core of nursing practice" (Neal, 1980).

Nursing and related fields have increasingly recognized the relationship between parent-infant interaction and health outcomes, especially for the child (Brazelton, Kodowski, & Main, 1974; Klaus & Kennell, 1976; Barnard & Eyres, 1979). Maternal-child clinicians frequently come into contact with parents and children in the delivery of health care service. An analysis of their interactive patterns as part of child health assessment would assist in meeting the goal of early identification of problems, when intervention could be most effective for the support of child health outcomes. Ideally, such a tool would also be an effective research tool.

One tool that has been developed for use by clinicians is the Nursing Child Assessment Feeding Scale (NCAFS),

out of the School of Nursing at the University of Washington (Barnard, 1978). This is a 78-item binary scale that defines the interaction based on six constructs: (a) sensitivity to infant's cues by the parent, (b) parent's response to infant's distress, (c) social-emotional growth fostering behaviors of the parent, (d) cognitive growth fostering behaviors of the parent, (e) clarity of cues given by the infant, and (f) responsiveness of the infant to the parent. These are measured by a series of dichotomous items to determine the presence or absence of specific behaviors in the interaction.

This tool was developed for use by clinicians doing direct observation in both in-patient and out-patient settings. It was used to describe local Washington state families. The scales showed moderate test-retest reliability across ages, likely influenced by developmental changes. In examining predictive validity, the NCAFS at 12 months was correlated with the 24-month Bayley mental score ($r = .55$), with Behar Preschool Behavior Questionnaire ($r = .61$) and with the Caldwell HOME score ($r = .79$) at 36 months, and with the Stanford-Binet ($r = .59$) at 48 months (King, 1979). A longitudinal study of 846 parent-infant dyads found that the NCAFS score is a better predictor of developmental outcome than mother's education (Barnard, 1979A). Utilization of the NCAFS requires a nine-week certification training program and the establishment of inter-rater reliability.

The purpose of the present study was to examine the efficiency of this tool in describing another population, and to compare that population with the Barnard sample (1979B). This would further establish the validity of the tool, and its potential usefulness in research as well as in practice.

Researchers acquired certification, and an inter-rater reliability of .86 was established prior to, and re-evaluated during, observations. The feeding episode was chosen because it is a common, frequent, and essential

caregiving activity, central in early parent-child interaction. It is an often observed and easily defined unit, with a beginning and end not controlled by the researcher, and is a natural situation in which to assess attachment and responsiveness.

The home environment, rather than the clinic environment, was chosen for observations because this is where the parent and child normally interact, and it is where they have the most control. Data were collected in 119 home visits to parents with their first-born four-month-old infants. As established by Barnard's guidelines, researchers observed either or both parents with the infant during a feeding episode.

Participating parents were predominantly mothers who volunteered to be in the study. Descriptive statistics were generated for comparison with Barnard's findings. Comparison was made between the feeding scale scores and scores on Caldwell's Home observation for Measurement of the Environment Inventory (1978), scores on the NCAST Teaching Scales, and scores on the Dyadic Adjustment Scale (Spanier, 1976). The interactions of mothers and fathers with infants in the present sample were also compared. Findings suggest the validity and usefulness of the Nursing Child Assessment Feeding Scales both in practice and research.

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A COMPARISON OF ADOLESCENT MOTHERS' PERCEPTIONS OF INFANTS IN "ROOMING IN" VERSUS TRADITIONAL HOSPITAL SETTINGS

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The adolescent mother and her baby are at risk for a variety of complicating health conditions before, during, and after delivery (Cran-Elsberry & Malley-Corinet, 1979; Merritt, Laurence, & Naeye, 1980). Improving the prenatal health care provided to the adolescent mother has been the focus of much research, innovative clinical programs, and federal monies. Much less effort has been expended in identifying ways to assist the adolescent in the postpartum period.

"Rooming in" is one technique which has been strongly supported in the literature as a positive means of enhancing bonding and mothering skills (Kennell, Jerauld, Wolfe, Chesler, Kreger, McAlpine, Steffa, & Klaus, 1974; O'Conner, Vietze, Sherrod, Sandler, & Altemeier, 1980). However, research done on "rooming in" has not controlled for the variable of maternal age and few studies have compared "rooming in" to traditional methods of postpartum care.

The purpose of this study was to compare adolescent mothers who received one of two different types of postpartum care (combined mother/infant care or traditional care with a centralized nursery) in terms of the adolescent mother's (1) perception of her infant, (2) satisfaction with nursing care, and (3) degree of comfort in caring for her infant.

The study was conducted in two different hospital settings. One setting utilized a traditional unit, and the other setting utilized a combined mother-infant care unit. In each setting, 32 adolescent mothers between 12 and 19 years of age were interviewed at 1-2 days postpartum. Each mother was asked to complete the Neonatal Perception Inventory (NPI I) developed by Broussard and Hartner (1971). Test re-test reliability of this tool was 0.22 for primiparas (Freese & Thoman, 1978). In addition, two tools designed by the study investigators (a "Satisfaction with Care" question and a "Degree of Comfort Scale," which measured maternal comfort in performing five mothering tasks) were administered.

At four weeks postpartum, the mothers completed Broussard and Hartner's Neonatal Perception Inventory (NPI II) and the Degree of Bother Scale (Broussard & Hartner, 1971). Test-retest reliability for the NPI II was 0.82 for primiparas (Freese & Thoman, 1978).

Summary statistics for the demographic variables for the total sample of 64 mothers were as follows: mean age of 17.6 years; mean educational level of 10.6 years of schooling; 80 percent of the mothers were single or separated; and 80 percent had an annual income of \$6,000 or less. No statistically significant differences were found between the rooming in and the non-rooming in group with respect to any of the demographic variables except education and race. Mothers in the non-rooming in group had completed more years of schooling ($p < .05$) and there were more Caucasian adolescents in the non-rooming in group ($p < .05$).

There were no significant differences in the total scores of the two groups on the NPI I and Degree of Comfort Scale administered at 1-2 days postpartum, using t-tests. There were also no significant differences in the total scores of the two groups on the NPI II administered at four weeks. However, adolescents with rooming in received more teaching regarding cord care

($p < .01$) while in the hospital, and mothers with rooming in were also more satisfied with their nursing care than the mothers without rooming in ($p < .05$).

At four weeks postpartum, adolescents without rooming in perceived the average baby as crying more than the rooming in group ($p < .05$). At this time, the non-rooming in group was also more bothered by their own infant's crying than the rooming in group ($p < .05$).

Since an experimental design was not used, causal inferences cannot be readily made. However, the results of this descriptive study suggest that rooming in may influence the amount of teaching provided to mothers as well as the degree of maternal satisfaction with nursing care. In addition, rooming in may alter perceptions as rooming in mothers were less bothered by their infants' crying at four weeks of age. The investigators believe that the findings of this study suggest that there may be advantages to the use of rooming in as an intervention for adolescent mothers.

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THE EFFECT OF SUPPORT ON LONG-TERM SUCCESS AT BREAST FEEDING

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Breast feeding is on the rise in this country, with the current rate now at 50 percent (Filer, 1978); this is in contrast with the rate of 18 percent found a generation ago (Meyer, 1968). Many new mothers have nowhere to turn for support and encouragement. The emphasis on childbirth as a healthy process has removed nursing mothers from contact with the health care system at precisely the time when they most need assistance with breast feeding. Breast milk, on the average, begins to come in on the second to fourth day--the period when mothers are discharged from the hospital.

The rate of long-term success at breast feeding seldom exceeds 50 percent (Hall, 1978). Notable exceptions include studies in which an attempt was made to provide information on breast feeding and support to mothers during hospitalization for delivery and in the post-partal period following discharge (Peterson & Bock, 1978; Hall, 1978). There are few controlled studies to replicate those findings.

A qualified experienced nurse can provide the kind of assistance a mother needs to achieve success at breast feeding.

Prior studies indicate that breast feeding declines rapidly upon discharge from the hospital (Fomon, 1974; Coles, Cotter, & Valman, 1978; Sloper, McKean, & Baum, 1975). This study tested an intervention designed to prevent this decline.

The purposes of this study were (1) to test the effects of support by the nurse on long-term success at breast feeding by comparing mothers who received hospital treatment (i.e., breast feeding information and support during hospitalization) with mothers who, in addition to hospital treatment, received follow-up telephone calls about breast feeding for six weeks after discharge, and (2) to compare the attitudes about breast feeding of mothers who were successful or unsuccessful at long-term breast feeding.

Subjects were 80 first-time breast feeding mothers selected from the post-partum unit of a suburban Baltimore hospital. All subjects were married; their ages ranged from 18 to 43 years. The study was conducted over a period of several years, with data from the first 20 subjects collected three years ago, and the remaining data collected last year.

All subjects received in-hospital teaching and support concerning breast feeding. Each mother was seen daily until discharge to have her questions answered and to provide her with assistance with breast feeding techniques.

Prior to discharge, the subject was randomly assigned to the follow-up or no follow-up group. The follow-up group received phone calls until six weeks after discharge; the no follow-up group did not. All subjects were telephoned at six weeks by a research assistant for an interview about their breast feeding status at that time.

Each subject signed a consent form, and completed a demographic data form and an Attitudes Toward Breast Feeding scale. This scale, developed for a previous study, contains 18 Likert-type items plus eight general questions concerning the subject's previous exposure to breast feeding. Split-half reliability (odd-even), corrected by use of the Spearman-Brown adjustment, was .83; coefficient alpha was .71.

Data were analyzed by means of t-tests and Pearson's correlations.

Hypothesis 1: There is no difference in success between subjects who received follow-up for six weeks and those who did not.

The t-test results were non-significant. The overall success rate was 83 percent, so there were few unsuccessful subjects with which to compare. Most of the subjects (69 percent) stated that they received assistance and support from other sources.

Hypothesis 2: Subjects who are still breast feeding at six weeks have higher attitude scores than do subjects who have ceased breast feeding by six weeks after delivery.

This hypothesis was rejected since the t-test showed a significant difference. Moreover, successful breast feeders were more likely to have attended breast feeding classes, done breast preparation, and planned to breast feed for a set period of time.

Hypothesis 3: There is no relationship between degree of satisfaction among subjects who are still breast feeding at six weeks and those who are not.

Using the Pearson Product Moment Correlation, there was a significant correlation between success and satisfaction. This null hypothesis was therefore rejected.

Hypothesis 4: There is no difference in success between subjects who decided to breast feed prior to pregnancy and those who decided during or after pregnancy.

The results were non-significant, demonstrating that, for this study, the timing of the decision was not significant in relation to success.

Hypothesis 5: There is no difference in attitude between subjects who decided to breast feed prior to pregnancy and those who decided during or after pregnancy.

Using the t-test, there was no significant difference.

Hypothesis 6: There is no difference in success between subjects with complications and subjects with normal vaginal deliveries.

Using the t-test, there was no significant difference. However, there were other differences: the complications group was older and started breast feeding later than the normal group.

This study presented data about maternal attitudes, and the influence of support and information on breast feeding success. Probably the most important findings were the 83 percent success rate, and the mothers' reports that breast feeding support was becoming more readily available in the community.

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Q METHODOLOGY IN NURSING RESEARCH: PROMISE AND PROBLEMS

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Q methodology was founded on the epistemological premise that it is possible to study subjectivity in an objective, orderly, and scientific manner (Stephenson, 1978, 1953). An approach to the study of subjectivity, Q methodology has commonalities with both quantitative and qualitative methodologies in an intriguing combination of the strengths of both research traditions.

While different approaches to the discovery of scientific knowledge are valuable, Q methodology, with its focus on the individual and on subjectivity, is a particularly viable approach that holds a great deal of promise for nursing research. The uses of Q methodology include, but are not limited to, the study of opinions and attitudes, groups, roles, culture, personality, decision-making, and values (Brown, 1980). A few substantive areas in which nurses might use Q methodology are parental perceptions of and reactions to their newborns, coping behaviors of patients with long-term illness, and belief systems influencing health-seeking behavior.

This paper presents the promise of Q methodology in nursing research through the explication of the technique and its many strengths.

Rather than focusing on the interindividual differences of traits within large sample sizes, Q methodology underscores intraindividual significance and requires a limited number of subjects, usually no more than 40. In Q technique, persons rate a group of 40-60 statements along a specified continuum of significance, such as most-like-me to most-unlike-me. This technique results in an array of items called a Q sort. Data obtained from

Q sorts are factor analyzed; the factors reveal the dimensions of the phenomenon under investigation as well as clusters of persons who hold similar viewpoints.

Q methodology is one solution to the problem of small sample sizes which plague many studies within nursing. Its approach to subjectivity is more penetrating than other forms of instrumentation and, since the subject is his/her own point of reference, it is particularly amenable to interorganizational use. Problems with missing data and response sets are virtually nonexistent, and Q studies are usually not costly to conduct. Data tend to demonstrate high reliability, and are conducive to both deductive and inductive interpretations.

Despite its promise for nursing research, Q methodology has its own set of problems with which the researcher must deal. The administration of Q sorts can be time-consuming, since subjects usually are not already familiar with the procedure to follow. Validity is at issue if subjects are not clear on how to respond. Although specifying the distribution of the Q sort is seen as a strength, since it requires subjects to make fine discriminations among items, subjects may make mechanical rather than conceptual choices in order to complete the process. Patients' limited energy resources are particularly important to consider.

Nurse researchers use a variety of methods, such as surveys, experiments, and a number of descriptive approaches to explore phenomena from a nursing perspective. Adding Q methodology to that repertoire would enhance the nature and the richness of the design alternatives for developing nursing knowledge.

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POWER SHARING IN UNIVERSITIES: THE CASE OF NURSING

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Power involves shaping bureaucratic rules and influencing discretion by the administration in organizations. The Strategic Contingency Theory (Pondy, 1969) focuses on organizational-environmental interaction and immediacy to workflow as a means of identifying powerful subunits. This study focused on the nursing schools in comparison to other subunits within their respective institutions.

The subunits that compete for power and resources in universities are disciplines organized as professional schools or academic departments in the Arts and Sciences. This study was an extension and replication of Pfeffer and Moore's 1980 causal model of resource allocation. It identified four power determinants and tested the effect of power and workflow need on the allocation of budget, faculty, teaching support, and facility support. Ten hypotheses were tested with data from 582 subunits in 88 universities. Subunits were chosen using a typology of professional schools developed for this study and Salancik, Staw, and Pondy's (1980) measure of the paradigm development of disciplines. The national sample of universities include four types identified by the Carnegie Commission on Higher Education: elite (35), doctoral (21), comprehensive (17), and health sciences (15).

The national sample of universities was chosen to include all 1980 National League for Nursing-accredited graduate programs in schools of nursing. Nursing schools are the only subunits on university campuses in which faculty and administration are essentially only women.

This study examined faculty gender as a power determinant. It also compared and contrasted nursing schools to other professional schools of education, library science, social work, medicine, pharmacy, engineering, and business administration, as well as the academic disciplines of chemistry and sociology, on characteristics of horizontal power identified in the Power Sharing Model and shares of resource allocations across university types.

Data were collected from the National Center for Education Statistics, American Council on Education, and 2700 mailed questionnaires. Questionnaires, sent to deans and department chairs, asked them to rate the power of subunits using Arnold Tannenbaum's (1968) control in organizations questionnaire and a reputational measure of power. Supplemental questionnaires seeking data not available from the National Center for Education Statistics and the American Council on Education were also sent to institutional research officers and deans and chairs of subunits being examined. The response rate of usable forms was 42 percent for institutional research officers and 58 percent for deans and chairs.

Path analysis supported the extension of the model of resource allocation, titled the Power Sharing Model. Multiple regression analysis was used to test the model across university types, professional school types, and disciplines. Testing homogeneity of types supported the typology of professional schools. Results supported the addition of sex mix as a predictor of power.

Based on the analysis and theoretical framework, it was recommended that nursing school administrators urge faculty to apply for research grants, increase the visibility of their school's contributions to university critical resources, seek strategic placement of faculty on key university committees, and creatively reduce faculty teaching loads to enhance the power and resource allocations of schools of nursing on all types of

campuses. The nursing profession needs to develop a research career path, perceive women's issues as nursing issues, and continue to support theory development and higher education for nurses.

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CANCER AND NUTRITION: DERIVING A THEORY OF ADAPTATION FROM A NURSING EXPERIMENT

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Cancer is often accompanied by extreme weight loss and nutritional deficiency. A longitudinal, clinical experiment was conducted to evaluate the effectiveness of two nursing intervention protocols, used singly and in combination, on nutritional status and performance status of persons with cancer.

Eighty-eight cancer patients, assessed as nutritionally at-risk, were followed for up to 16 months. Subjects were randomly assigned to a control group or to one of four intervention groups: nutritional supplementation; relaxation training; both nutritional supplementation and relaxation training; or nurse's visits not involving either nutritional supplementation or relaxation training. Subjects in any intervention group were visited at home every other week for the first four months. Those subjects, as well as control subjects, received follow-up visits at 4, 7, 10, and 16 months.

Nutritional changes and patterns of activity were assessed. Initial statistical equivalence between randomly assigned experimental groups was established. In repeated measures analysis of variance, significant group by time interactions were obtained for weight (as percentage of ideal weight) and for arm muscle circumference (a measure of protein status) indicating that for these variables, the groups changed differentially over

time during the intervention period. With the Karnofsky scale (Karnofsky & Burchenal, 1949) measure of performance status as dependent variable, the group by time interaction approached significance ($p = .08$). For all three variables, gain was greatest for the relaxation group, and most severe loss occurred in the control group. Relaxation, combined with nursing visits, seemed to lead to improved nutrition for this sample of potentially malnourished cancer patients, while dietary supplements, supplied by the program, did not. This may be due to the fact that supplements were often stigmatized, and, on occasion, called "cancer food."

Collection of extensive personal information on these patients led to observations on the connection between personality styles and response to illness. The factors of activity and flexibility appeared to combine in shaping each person's unique reactions to cancer and ability to respond creatively to a health crisis. Development of assessment and intervention approaches related to such behavioral manifestations of creative adaptation would be a fruitful area for nursing research.

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THE EFFECT OF A DEATH EDUCATION WORKSHOP ON NURSE ATTITUDES AND BEHAVIORS

PHASE I: DEVELOPMENT OF AN OBSERVATIONAL TOOL TO DOCUMENT NURSE BEHAVIOR WITH TERMINALLY ILL PATIENTS

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Providing direct patient care to terminally ill patients has been identified as a source of stress to the nurse (Quint, 1966; Kubler-Ross, 1969). This supposition, coupled with an identified need of the staff nurses on a 25-bed gynecological oncology unit for information about dealing with terminally ill patients, was the impetus to design a workshop for staff addressing death and dying. The purpose of the workshop was to familiarize nurses with (a) the psychological experience of the dying person; (b) sociological perspectives on death; (c) ethical issues surrounding death and dying; and (d) grief counseling techniques for the nurse. The investigators' premise was that education about death is a developmental process that transmits valid death-related knowledge and its implications for subsequent change in attitudes and behaviors (Seidel, 1981). While it is inappropriate to try to restructure students' attitudes, educators are entitled to demand that health professionals become more aware of the strength of their own attitudes and how such attitudes may affect their behavior towards patients and influence clinical and ethical decisions (Simpson, 1979). It was hypothesized that nurses would: (1) increase the number of behaviors directed toward non-physical needs;

(2) increase the number of open verbal responses; (3) increase the frequency of eye contact and touch; (4) decrease their proximity to the patient; and (5) evidence a change in attitude.

A literature review suggested attitudinal change of varying duration after death education programs (Hopping, 1977; Murray, 1974; Miles, 1980; McDonald, 1981), but provided little evidence to support behavioral change on the part of the nurse in nurse/patient interactions. The Winget questionnaire "Tool for Understanding the Dying" (Ward & Lindeman, 1979) was chosen to measure attitudes; however, no tool to document behavioral change was available. It became apparent that the overall study would be comprised of a number of phases. The purpose of Phase I was to design an observational tool to measure behavioral change.

Initially, a highly structured behavior checklist, based upon experiential knowledge and literature review was developed. Behaviors included interactions addressing non-physical needs, frequency of closed versus open verbal responses, and frequency of eye contact, type of touch, and proximity to the patient. The tool content was validated by a panel of four master's and doctorally prepared nurses with expertise in psychiatric nursing and/or caring for terminal^y ill patients.

Inter-rater reliability was tested on a separate unit with a high proportion of terminally ill patients. A convenience sample of 11 nurses was observed concurrently by the two co-investigators during nurse/patient interactions. Each nurse was followed by two observers for six randomly chosen 10-minute intervals. Inter-rater reliability was 90 percent within the non-verbal section, but was virtually nonexistent for the verbal behaviors. There were three hypothesized reasons for this disparity: (1) The verbal behavior categories were not mutually exclusive. (The observers saw the same behaviors, interpreted them in a similar manner,

but documented them differently on the tool.) (2) Investigators interpreted nurse/patient verbal interactions differently at times. (Verbal behaviors must be viewed with consideration given to the context in which they occur. The tool was designed to document frequency of open verbal responses versus closed verbal responses; however, situational variables determined whether a response was open or closed more often than did the content of the verbal response. Therefore, consistent documentation of a nurse's verbal behavior could not be accomplished utilizing this tool.) (3) The tool was cumbersome. (The number of categories was too large to permit accurate documentation.)

The investigators then restructured the tool to reflect behaviors which were considered clinically important and which had a high degree of inter-rater reliability. Based on a literature review and previous pilot testing, the following behaviors were selected as appropriate to evaluate: eye contact, touch, proximity to the patient, and nurse initiation of discussions of psychosocial concerns. A semi-structured approach was selected to measure nurse initiation of discussion of psychosocial concerns and open responses to patient initiation of the same. The four questions addressing these behaviors were answered by the observer immediately after the observation period.

Instrument testing was performed on a 40-bed medical unit which houses a high proportion of terminally ill patients. A total of 15 nurses were observed for two-hour time intervals simultaneously by the two investigators. Inter-rater reliability ranged from .75 (item 1) to 1.00 (item 7). The lower reliability coefficient for item one (semi-structured) is related to differing interpretation by observers of the operational definition of psychosocial need. Analysis of descriptive responses to items 1 through 4 indicates that all discussion of psychosocial need involved information exchange. No nurse/patient interactions addressed the patients' needs for hope, emotional expression, or concerns related to death and dying (all of which are included in the definition of psychosocial need).

• Touch behaviors occurred in 55 percent of all encounters; only 5 percent were not task oriented. Nurses maintained eye contact throughout most interactions; however, in two interactions nurses avoided eye contact when the patient posed a difficult question.

While the many problems inherent in observation cannot be overcome, the use of both highly structured and semi-structured sections of the tool reduces a number of the limitations. The format of the non-verbal section reduces the halo, leniency, severity, and central tendency effects. The verbal response questions permit the observers to consider contextual components. Anecdotes documented in response to the verbal behavior questions will be used to clarify nurse behaviors for further study.

A number of additional considerations for observational experiences arose during the study. (1) Separating physically oriented behaviors from psychosocially oriented behaviors was difficult. Nurses address both simultaneously. Without a clear definition of psychosocial need, delineation of behavior is impossible. During initial pilot testing, psychosocial need was refined based on the work of Young-Brockopp (1982). (2) In structured tools, the number of categories must be limited—a tool with more than 15 categories is difficult to use. (3) Our experience has indicated that observations are most fruitful at certain times of the day. For the purpose of documenting nurse/dying patient interactions, the ideal time was mid-morning when nurses were involved in direct care with a limited number of patients. Observations at other times of the day yielded a low percentage of the desired behaviors. (4) Observer location was of paramount importance. If positioning was not ideal, facial expressions, eye contact, and touch were missed or misinterpreted. When observing behavior, one must clarify the observer's position in reference to the nurse and patient. (5) Some ethical questions arose during the study. What should the observer do when the patient and nurse are behind closed curtains?

What response does the observer make when the patient initiates a discussion of psychosocial issues with the observer?

The Observation Tool to Document Nurse Behavior with Terminally Ill Patients developed in Phase I will be valuable to other investigators hoping to study nurse/patient interaction as it is grounded in the experiential component of nursing. Additionally, the knowledge gained and shared by the investigators about observational skills and tool development may be helpful for other nurse researchers.

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TOP ACADEMIC NURSE ADMINISTRATORS' PERCEPTIONS OF ESSENTIAL BEHAVIORS FOR THEIR POSITIONS

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The purposes of this exploratory study were to identify behaviors that are essential to the successful administration of a university nursing education unit as perceived by current top-level nurse executives, and to identify whether certain institutional and educational variables are related to selected role behaviors.

A complete, up-to-date listing of baccalaureate and higher degree programs throughout the country, which included deans, chairpersons, directors, or heads of the nursing education unit was obtained from the American Association of Colleges of Nursing. Of the 374 potential participants, 60 percent (224) replied to the survey questionnaire. The questionnaire contained 53 behaviors which were identified from a literature review, individual and group discussions with several top nurse administrators, and an in-depth discussion with a nurse researcher engaged in decanal research. Additional items measured five institutional variables and two educational variables.

The majority of the respondents (78 percent) had doctoral degrees. Most reported to vice-presidents (45 percent) or deans of disciplines other than nursing (37 percent). One half of the respondents had been in their positions less than five years.

From the 53 role-related behaviors, the sample identified 18 essential (80 percent or more agreement) and 17 non-essential behaviors (40 percent or more agreement). Essential behaviors were specific administrative and managerial transactions in the educational unit and the greater university, and activities that conveyed the unit's mission to significant groups. Non-essential behaviors included policy negotiations between nursing service and education, professorial role functions, and interdisciplinary roles. Chi-square analysis identified a significant relationship between title, enrollment, and administrative structure and five behaviors: (a) develop a coalition to meet the goals of the profession, (b) establish reciprocal mechanisms with nursing service administrators for jointly appointing faculty and nursing service staff, (c) practice in their area of expertise, (d) develop strategies to meet conflict, and (e) ensure building maintenance and improvement.

The study provides clarification of the top nursing role in academic administration and can be used by nurse executives to reevaluate their perceptions of essential and non-essential behaviors. The findings also can be used by educators to plan programs that meet the needs of potential candidates for the position. In addition, potential candidates can benefit from the findings by planning experiences which foster development of the essential behaviors.

A CASE STUDY OF THE IMPLEMENTATION OF LEGISLATION PROVIDING DIRECT THIRD PARTY REIMBURSEMENT FOR THE SERVICES OF CERTIFIED NURSE PRACTITIONERS IN THE STATE OF MARYLAND

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A Maryland state law which mandated direct third party reimbursement for the services of nurse practitioners without direct physician supervision was enacted in 1979. Maryland was one of the first states to pass this type of legislation. There was no empirical evidence available that addressed the extent to which the law had been implemented or the barriers which had been encountered in the implementation process. The purpose of this study was to explore this implementation process.

The research design was a case study using a modification of the Nakamura and Smallwood (1980) theory of implementation as the theoretical framework. This theory views the implementation process as three "environments" which are connected by "linkages." The three environments are: policy formation, policy implementation, and policy evaluation.

Instruments included: (1) an open-ended interview schedule which was modified for use with groups of nurse practitioners, insurers, legislators, physicians, midwives, and psychiatric/mental health nurse specialists; (2) a closed-ended questionnaire which was mailed to all certified nurse practitioners with written agreements in Maryland. The interview schedules consisted of part I, which addressed broad-based economic and policy questions, and part II, which was specific to the practice role of the respondent being interviewed. The questionnaire addressed the demographic, practice, and reimbursement characteristics of the nurse practitioners.

Data collection was conducted in two phases: the exploratory phase and the descriptive phase. The sampling process and instrumentation varied within these phases. In phase I, the exploratory phase, a purposive sample of 13 nurse practitioners, 11 insurers, 13 legislators, 10 physicians, 5 midwives, and 6 psychiatric nurse specialists were interviewed. Using official records, and upon the recommendation of colleagues, respondents were selected on the basis of their involvement in the enactment or implementation of the legislation or their knowledge of the topic. The sampling principle in the initial phase was on "richness," that is, how rich or meaningful the data would be when supplied by the sample chosen (Selltiz, Wrightsman, & Cook, 1976). The usual concern about representativeness of the sample for purposes of generalizing to the larger population did not apply here. Open-ended interviews ranging from 30 minutes to 3 hours in length were conducted, tape-recorded, and transcribed.

In the analysis of exploratory phase data, the responses were independently placed into categories by two researchers. An average of the estimates of the inter-rater reliabilities on the independent placement of the responses into the categories on 20 randomly selected questions was 91.83 percent. Frequencies and percentage tables were used to present the data.

In phase II, the descriptive phase, a questionnaire was developed using the categories of responses determined during phase I. It was pilot-tested on 10 nurse practitioners without written agreement in Maryland and revisions were made on content and format. It was mailed in July 1983, to 211 nurse practitioners certified in the state of Maryland with written agreements approved by a joint committee of the Board of Examiners of Nurses and the Board of Medical Examiners. There was a 74.3 percent return rate; 148 of the questionnaires met the criteria for the study. Fifty-two nurse practitioners with written agreements in Maryland did not

respond to the study. Using a Chi-square procedure, it was determined that there was not a significant difference between the respondents and the nonrespondents on the following variables: level of education, type of nurse practitioner preparation, age range, and type of nurse practitioner certification. Inter-rater reliability for the coding of the responses, using a random sample of the questionnaires, was 99.33 percent. Frequencies and percentage tables were used in descriptive phase data.

Based on findings from the descriptive phase, nurse practitioners in Maryland perceived that the three greatest barriers to the implementation of the legislation were: resistance by physicians, resistance by insurers, and the salaried status of nurse practitioners. Other reasons for lack of implementation included: most of the nurse practitioners had not applied for provider numbers, the majority perceived that the law has had no effect on them, few are reimbursed on a fee-for-service basis, and most of the third party claims are being submitted by employers or institutions. Regarding payment of fees for the services delivered by nurse practitioners, the majority of their patient contacts are covered by insurers, few nurse practitioners sign the insurance claim form for the services they provide, and the charges for the services provided by nurse practitioners are highly correlated with the charges for the services provided by physicians.

Implications for nursing are that prior to the enactment of state legislation providing direct third party reimbursement for the services of nurse practitioners, it would be advantageous to assess the reimbursement needs and the most appropriate reimbursement modalities for nurse practitioners in that state. Policy decisions regarding the reimbursement of nurse practitioner services must address the discrepancy between the insurers' interpretation of services and the nurse

practitioners' perceptions of services offered. The insurance package and marketability are crucial to the implementation process; a mandated offering provision could render nurse practitioner reimbursement legislation unimplementable if unreasonable premiums are charged and/or it is marketed poorly. In making policy decisions regarding the rates for nurse practitioner services, strong consideration should be given by insurers to ways of implementing the fixed-rate alternative that is clearly preferred by nurse practitioners. If more attention is not given to the implementation phase of direct third party reimbursement for nurse practitioners, the efforts to provide that reimbursement may not be realized.

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**COLLABORATION IN CONTINUING-
EDUCATION FOR NURSING: TRAINING
COMMUNITY HEALTH NURSES TO CARE FOR
DISABLED CHILDREN AND THEIR FAMILIES**

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This study was an evaluation of the Community Health Nurse Training Project,* a collaborative continuing education project for nurses in the care of disabled children and their families, sponsored by Children's Hospital National Medical Center and Georgetown University Child Development Center. The collaborative aspects of the project allowed both institutions to draw together an interdisciplinary team of 20 experts who participated in the program. The program was unique in that it included both 60 hours of didactic experience and 60 hours of supervised practicum experience applying the

*Community Health Nurse Training Project (NU 23063), Department of Health and Human Services, Division of Nursing, Special Projects Branch.

learned skills in the home setting under the supervision of nurse preceptors. The program was presented a total of four times during the funded period of 1981 to 1984. Results for two groups of participant nurses are reported.

The study's purpose was to document cognitive, affective, performance, and role changes associated with participation in a prototype continuing education project for nurses. Subjects were Registered Nurses caring for disabled children in metropolitan Washington, D. C. community health agencies who volunteered for participation in the program. The study included pre-post testing of 21 nurses comprising Group 2 participants, and an 8-month follow-up of 19 nurses, comprising Group 1. Affective assessment instruments included the Attitudes Towards Disabled Children (ATDC) scale adapted from the Attitudes Towards Disabled Persons scale (Yuker, Block, & Young, 1970). Other instruments measuring affective, cognitive, performance, and role changes were constructed for this project and were subjected to content validity assessment. Internal consistency reliability coefficients for the measures ranged from an alpha of 0.55 to 0.93. Pre-post comparisons were made by t-tests (for correlated means) and correlation analyses were made by the Pearson r. All cognitive tests were group administered; all other instruments were self-administered. The 8-month follow-up semistructured interview was submitted to frequency analysis.

Major results of the post-testing included a significant increase in knowledge scores ($p < .03$), reported confidence levels ($p < .01$), and reported frequency of use of presented assessment and intervention skills ($p < .01$). The pre-test scores of the ATDC correlated significantly with the post-test knowledge scores ($p < .001$).

Major results of the 8-month follow-up interview with Group 1 participants included a perceived increase in empathy for handicapped children (23 percent). Other nursing role changes included a continued increase in the

use of standardized assessment tools (24 percent); development of innovative approaches in the care of disabled children (33 percent); and increased comfort and participation in interdisciplinary relationships (30 percent). The results document the expansion of nursing practice which can be achieved when nurses participate in intensive, specialized, continuing education programs. Networking skills among participant nurses, their agencies, and referral hospitals which were established during participation in the program have become an important source of support for nurses working with disabled children throughout the metropolitan Washington, D. C. area. It was concluded that significant change can be made in nursing knowledge, attitudes and skills by participation in a continuing education program; and that the ATDC may be helpful in predicting post-test knowledge scores.

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EPIDEMIOLOGICAL SURVEY OF CORONARY HEART DISEASE RISK FACTORS IN A BLACK COMMUNITY

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Blacks have a 50 percent greater chance of developing hypertension than do whites (American Heart Association, 1982; Freis, 1973) and, when present, it is twice as severe (McIntosh, et al, 1978). It is estimated that one out of four blacks has hypertension compared to one out of six whites (Hosten, 1980). The purposes of this study were to identify coronary heart disease (CHD) risk factors present in a black community, to examine relationships between hypertensive and other psychosocial and physiological risk factors, and to gather baseline data for the development of a multiple risk factor preventive program. This study viewed hypertension both as a risk factor and as a response to other CHD risk factors (i.e., diet, stress, exercise).

The total non-probability sample consisted of 285 subjects—179 females and 106 males, ages 18 and above. Subjects were surveyed through eight predominately black churches located in a small urban town of 47,730, with a black population of 4,739. Approximately 10 percent of the black adult population participated in the study.

The design was ex post facto. The Risk Factor Questionnaire (RFQ) was developed and piloted by a multidisciplinary team. The RFQ consisted of: demographic data; self-report of risk factors, e.g., heredity, smoking, alcohol, stress, diet, exercise; and risk factor

measurements of height, weight, and body mass. Stress was measured by a 5-item Type A Personality Scale, an 8-item Life Satisfaction Scale and a 40-item Interpersonal Trust Scale (Rotter, 1967). Reliability coefficients for this sample were 0.69, 0.69 and 0.76, respectively.

Subjects completed the RFQ and physical measures were taken. Hypertensive participants were referred to their personal physician or the project physician consultant. Pearson's correlations were utilized to determine relationships. Multiple regression was used to determine the effects and magnitudes of variables as predictors.

Significant relationships were found between diastolic blood pressure and Type A Personality $r_{267} = 0.15$ ($p = .05$), Life Satisfaction $r_{283} = 0.11$ ($p = .03$), and Interpersonal Trust $r_{264} = .24$ ($p = .001$). Systolic and diastolic blood pressure were significantly associated with recreational activity with $r_{279} = 0.26$ ($p = .001$) and $r_{279} = 0.13$ ($p = .01$), respectively. Weight was significantly associated with elevated systolic blood pressure $r_{279} = 0.36$ ($p = .001$). Multiple regression analyses indicated that high blood pressure in self, age, and salty foods were predictors of diastolic blood pressure (Multiple R = 0.64, Adjusted R Squared 0.39), while age, high blood pressure in self, and fat intake were predictors of systolic blood pressure (Multiple R = 0.73, Adjusted R Squared 0.50).

Significant relationships between blood pressure and stress variables have implications for stress reduction procedures. The statistically predictive values of systolic and diastolic blood pressure in self with dietary salt and fat intake have implications for community-wide health teaching programs regarding diet and blood pressure control.

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VARIATIONS ON AN OLD THEME: AN UPDATE ON HANDWASHING

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This presentation summarizes the results of three research projects conducted during 1980 to 1982. Major purposes of the studies were:

1. To determine the prevalence of gram-negative bacteria (GNB) on hands of hospital personnel.
2. To identify factors which influence handwashing (HW) behavior of patient care personnel.
3. To evaluate the influence of a role model on HW behavior.

The hand flora of 103 hospital personnel and 50 controls were studied over a mean of 35 days. One or more species of GNB were found to be carried persistently on the hands of 21 percent of hospital personnel and 80 percent of controls (Larson, 1981). Despite the fact that hands of health care personnel are a documented source of transmission of nosocomial infections, compliance with acceptable levels of HW is poor (Albert & Condie, 1981). Therefore, 193 hospital personnel, a convenience sample, were surveyed with a questionnaire based on a decision theory model (Edwards, 1954) to identify factors important in influencing individuals to wash or not wash their hands. One significant factor identified as an important determinant of HW behavior

was the HW practices of professional colleagues (Larson & Killien, 1982). To test this possibility, a study was conducted to assess the effects of attending physician HW behavior on HW practices of medical house staff.

For two months one investigator accompanied a medical team (1) attending rounds during which the attending physician "role model" washed hands between each patient contact (experimental team), (2) work rounds with the same team in the absence of the "role model," and (3) work rounds with the same team in a succeeding month when the attending physician and house staff had changed (control team). None of the team members except the "role model" was aware of the study.

During the study period 87 patients were visited, and 169 contacts when HW were indicated. HW occurred in 47 (29.0 percent) of these instances. HW practices of experimental and control groups during work rounds were significantly different: the experimental team washed 48.1 percent of times indicated; the control team, 24.1 percent, $p < .05$. If our findings are substantiated by studies in various health care settings and observations with other health care personnel groups, there are significant implications for the importance of the clinical mentor in influencing HW behavior.

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DEATH EDUCATION AND DEATH ANXIETY

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The purpose of this study was to investigate the immediate, residual, and long-term residual effects of death education on the death anxiety level of nursing students. Death anxiety level was also related to three categorical variables: age, personal death experience, and previous nursing experience.

Two intact classes of female nursing students from a small women's university were randomly assigned to experimental or control groups. Seventy-four subjects completed the study through the post-posttest and 50 subjects were retained through the follow-up study one year later.

This study utilized a pretest-posttest repeated measures quasi-experimental design. Analysis of covariance and stepwise multiple regression statistical models were used for data analysis. Templer's (1970) Death Anxiety Scale (DAS) was employed for all tests of the dependent variable.

Data for the study were collected during a 15-month period from October 1981 through December 1982. After completing the pretest and a questionnaire, subjects in the experimental group participated in a seven-hour death education instructional unit while subjects in the control group continued with regular classroom instruction. Both groups were posttested immediately after the instruction and post-posttested four weeks later. One year later a follow-up study was conducted by mail with a 68 percent response rate.

Results of analysis of covariance on all three post-treatment testings revealed a significant difference

($p < .001$) between the death anxiety level of subjects who participated in the death education and those who did not. Results of stepwise multiple regression procedure indicated that there was no relationship between the categorical variables studied and pretest death anxiety level. On the follow-up study, however, there was a negative relationship between previous nursing experience and the death anxiety level of subjects in the experimental group.

The death education instructional unit utilized in this study appeared to result in a reduction in death anxiety level, which remained stable over a one-year period. There was also an indication that subjects in the experimental group with previous nursing experience were more resistant to changing their death anxiety level than those without previous nursing experience.

The following implications emerged from this research: (1) Death education must receive high priority in nursing education to reduce the death anxiety level of preservice nurses. (2) Individuals with previous nursing experience need more intensive death education programs in order to effect a positive change in death anxiety level.

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RELIABILITY ESTIMATES IN PUBLISHING NURSING RESEARCH: CURRENT USE AND DISUSE

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Reliability estimates for an instrument or other data collection strategy are not sample invariant, as they are not a property of the data collection strategy. Therefore, the reliability of a data collection strategy must be reestimated in each application. The purpose of this study was to determine the extent of reliability estimates, for all types of data collection strategies, in recently published nursing research. A second purpose was to see if there had been any change (increase) in the reporting of reliability estimates over the study period.

An ex post facto survey design was utilized in this study. A stratified random sample of studies published during the past five years (1978 to 1982) in Nursing Research and Research in Nursing and Health was selected. The total number of research articles published in each journal during the five years was determined and a proportional allocation of articles was selected from each journal. A total of 70 articles were surveyed. Using an investigator-designed coding form, the following data were collected by the researcher from each article: (1) intended applications of the finding(s) of the study—clinical, educational, administrative, or other application; (2) methods of data collection or strategy utilized—previously established, new, or a combination of established and new data collection strategies; (3) report of previous reliability estimates of established data collection strategies; and (4) report of reliability estimates for the data collection strategy or strategies used in the current study. Using 10 non-sampled articles as a pilot and a one-week interval, the intra-rater reliability for this data collection was found to be .98.

As the proportion of studies in which reliability estimates were reported was not significantly different between the two journals ($t = 0.204$), combining the articles across the two journals was considered appropriate. For the two journals combined, 45 percent of the articles were based on the use of established data collection strategies, 38 percent on the use of new data collection strategies, and 13 percent were based on combinations of established and new data collection strategies. For 3 percent of the articles, existing data sets were used.

In the articles in which only established data collection strategies were used, 56 percent contained reliability estimates for the previous use(s) of the strategy whereas only 22 percent contained reliability estimates for the current use of the strategy. In the articles where only newly developed data collection strategies were used, 52 percent contained reliability estimates.

When both established and new data collection strategies were used in combination, the extent of reliability estimation or reestimation was different from the singular use of these strategies. In these strategy combination articles, no reliability estimates were reported for the previous or current uses of the established strategy, yet 89 percent of the new strategies had reported reliability estimates.

When the proportion of articles per year with reliability estimates was addressed, it was found that there was no significant change in the reporting of reliability over the study period. This was found for the combination of the two journals as well as for each journal separately. It should be noted, however, that the lack of significance is probably a function of the use of the proportion of articles per year which resulted in a small sample size ($n = 5$ years), thereby decreasing the probability of a significant finding. From a cursory analysis of that same set of data, there is a noted increase in the

proportion of articles in Nursing Research with reliability estimates and a corresponding decrease of the same in Research in Nursing and Health.

It was concluded that the estimation of reliability of measurement strategies is either not receiving sufficient attention in the teaching of the research process or is not considered necessary for the acceptance of a nursing research article. Despite the increased sophistication in nursing research, a fundamental principle of measurement, the reliability of the measures, is commonly being ignored. Reliability, like validity, is sample-dependent and requires estimation with each application of a data collection strategy. Knowledge of the current reliability of a data collection strategy is necessary for accurate interpretation of the findings of a study. Therefore, guidelines for the estimation of reliability for each type of data collection strategy were presented.

WOMEN'S LITERATURE AND THE CLIENT BASE OF NURSING

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Historical studies of nursing usually describe the evolution of nursing as a profession, concentrating on nursing leaders, their concepts of nursing, and their activities. Such studies engender understanding of their motives, beliefs, values, and hopes. However, nursing literature reveals a persistent gap concerning appropriate education, appropriate clinical functions, and attitudes as perceived by nursing leaders and as perceived by the "rank and file."

Sigerist (1960), a medical historian, has suggested that history should provide a more complete picture of the development of civilization; it should make us aware of our beginnings, of where we stand today, and the direction in which we are heading. Shryock (1953) and Clarke (1971) observed that the history of any science or profession could best be interpreted in terms of its internal trends and its relation with the social and cultural environment in which it evolved.

The purpose of this study was to identify the interplay of cultural values and social norms with women's perception of role as revealed through popular women's literature prior to the emergence of professional nursing in the United States and its effect on the client base of nursing. A situational approach was used, combining people and the environment into one analytic scheme (Berkhofer, 1969).

Relations between the internal aspects of events and the external environment were analyzed, focusing on what

people do and how they behave. Emphasis was on the cultural and social factors influencing situations and nursing behavior. Limited attention was given to conscious intention or unconscious motivation of the writers and no attention was given to their perceptions of physical environment or physiological factors.

Merton (1957) suggested that social structures might be analyzed by changing function from a mathematical sense to an organic sense by using 11 steps for analysis. In modifying Merton's paradigm only three steps were retained:

1. The objects of analysis were those representing standardized and repetitive social roles and cultural patterns. Socially acceptable women's roles and attitudes as portrayed in women's literature were, then, analyzed against accepted norms of behavior for nurses as revealed in nursing literature, letters, editorials, and articles in early nursing journals.
2. Subjective motives and purposes of women authors were separated from the objective results of their writings.
3. Role segmentation, hierarchical ordering of values, and social divisions of labor were analyzed.

Examination of popular women's literature of the last century revealed a centrality of mission. Focus was on heroines who surmounted heavy burdens and were noble, virtuous, kind, sympathetic, helpful, cheerful, and loyal, no matter what the difficulty. These were also attributes of the "good nurse" that are described repeatedly in the reviews of letters, editorials, and articles published in nursing journals from 1889-1920. Obedience, silence, and anonymity were frequently cited as desirable attitudes. As with heroines in women's literature, nurses were expected to be morally superior beings.

Women's literature, read by thousands of middle and lower socioeconomic classes of American women, influenced these women concerning role attributes and acceptable attitudes and status in society. The novels also influenced those who would become nurses in the twentieth century. The whole contributed to the disparity that persists between leaders of nursing and their perceptions of nursing role and the perception of the average nurse clinician.

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RELATIONSHIP OF POLICY TO PRACTICE IN THE DELIVERY OF MEDICARE HOME HEALTH SERVICES

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This was an exploratory study conducted to examine and analyze the relationship between Medicare policy for home health services and the actual delivery of those services. The purposes of the research were:

1. To reveal the correlates of professional nurse decision making in providing home care—in particular, how policy, patient characteristics, and components of the scientific discipline of nursing are related to the care given;
2. To learn more about the nature of nursing autonomy—in particular, what kind of accountability nurses assume in delivery of home care services.

The methodology was primarily qualitative and included interviews, record review, participant observation, and analysis of case studies developed for all patients observed receiving care. Quantitative analysis was also used to suggest three hypotheses.

The design of the study was to observe 50 home visits to Medicare patients, to collect data on all process and environmental components of those visits, and to analyze the content of the visit and care given.

The patient visits were selected randomly to represent all geographic, ethnic, and sociocultural elements in the population served by the agency chosen for study. Medicare policy criteria selected were the three major eligibility criteria: homebound, skilled care, and

physician plan of care. Policy compliance was determined using Medicare definitions for each criterion. Numerical data were collected regarding policy compliance; qualitative data were collected to describe actual service delivery and to explain policy non-compliance.

Of the 50 patients visited, 19 were not homebound, 16 were not receiving skilled care, and two had no physician plan of care. Seven were doubly ineligible and one patient met none of the three criteria. Only 22, or less than half, of the patients receiving care reimbursed by Medicare were truly eligible.

Nurses consciously and deliberately manipulated policy to give needed care. In comparing patients who were ineligible for care with those who were eligible, important differences emerged. Ineligible patients more often: lived alone; needed adaptive assistance; and needed multiple services not available in any other single care setting.

Further analysis of physician plans of care revealed the following:

1. All physician plans of care were amended or rewritten by the nurse after the first visit.
2. In exactly half of the cases (25 of 50), the physician plans of care were inadequate, even for the very basic aspects of skilled care.
3. Specialist physician plans were more often inadequate than plans written by primary care physicians.

Hypotheses emerging from the study include:

1. Nurses manipulate policy to give needed care.
2. Nurses assume accountability for care planning and care delivery, even in the absence of policy mandate.

3. Nurses identify areas in which their scientific discipline operates, even when at odds with policy.

Implications are broad and important:

1. Nurse directed and delivered home care services may be more legitimate and comprehensive than physician directed care; cost implications of this finding may also be positive.
2. Policy development and evaluation may require different criteria when dealing with behavior of professionals.

THE EFFECTS OF MODIFYING THE ENDOTRACHEAL TUBE SUCTIONING/MANUAL HYPERVENTILATION PROCEDURE ON SEVERE CLOSED HEAD INJURED PERSONS

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Closed head injuries constitute a serious and sometimes life threatening condition to persons so afflicted because of secondary injury associated with the rapidly developing cerebral edema and/or intracranial bleeding (Jennett, 1977). These secondary injuries result in elevated intracranial pressure (ICP) and decrease cerebral perfusion pressure (CPP). While therapeutic interventions have provided ways of medically managing the acutely ill, head injured person (Marshall & Shapiro, 1977), nursing interventions have not been systematically or quantitatively investigated except as pilot studies (Shalit & Umansky, 1977; Mitchell & Mauss, 1978). Thus, the safety of instituting nursing interventions remains unclear.

This paper reports findings of a follow-up study related to the effects of modifying the nursing intervention of endotracheal tube suctioning/manual hyperventilation (ETTS/MH) procedure on severe closed head injured persons. An earlier study (Parsons & Shogan, in press) documented that the procedure of ETTS/MH resulted in significant ($p \leq .05$) incremental increases in the

physiologic measurements of heart rate (HR), mean arterial blood pressure (MABP), mean intracranial pressure (MICP), and CPP. These elevations were more pronounced following the second and third catheteral passes into the endotracheal tube. In the earlier study, MH was only 30 seconds in duration after each catheteral pass. Physiologic measurements remained elevated above baseline levels for at least one minute following the termination of the procedures.

Research questions addressed included: (1) What effect does modifying the MH procedure from 30 to 60 seconds after the second and third catheteral passes have on the cerebrovascular status of severe closed head injured patients whose baseline (resting) MICP is < 20 mmHg? (2) Do physiologic measurements of HR, MABP, MICP, and CPP recorded upon subjects during the ETTS/MH intervention return to baseline (resting) levels within a five-minute period following the termination of the intervention?

The sample consisted of 15 severe closed head injured patients who had been admitted to a Surgical Intensive Care unit (SICU) in a University Medical Center, and who met criteria for selection. No restrictions were placed on the sample with respect to age, sex, or admission blood alcohol concentration (BAC).

Subjects with documented severe closed head injury were selected who required intubation and mechanical ventilation and who had in place a functioning subarachnoid bolt (SAB); an arterial catheter; and standard electrocardiographic electrodes for purposes of recording mean intracranial pressure (MICP), mean arterial blood pressure (MABP) and heart rate (HR). Cerebral perfusion pressure (CPP) was calculated using the equation, $CPP = MABP - MICP$. All subjects were required to be without severe pulmonary-thoracic complications. Recording of the four dependent variables (i.e., HR, MABP, MICP, and CPP) were made using a calibrated bedside Hewlett-Packard Patient Monitoring System

(H-PPMS). The research design was a partially between-subject and partially within-subject (repeated measures) quasi-experimental design. A median split of the sample was done by eliminating one subject who had an unusually high baseline (resting) MICP; the remaining 14 subjects were divided into two equal groups of seven. Group I included subjects with a baseline MICP of < 9 mmHg; group II contained subjects with a baseline of > 9 mmHg. Specific comparisons were made between and within groups, with 13 levels of repeated observations in each of four qualitatively different sets: baseline, manual hyperventilation, endotracheal tube suctioning, and recovery. Data were analyzed using multivariate analysis of variance (MANOVA), with the repeated observations treated as multiple dependent measures. Separate analyses were carried out for the physiologic measures of HR, MABP, MICP, and CPP. Special contrasts and trend analyses were used where appropriate to address specific research questions. The alpha level of significance was set with $p \leq .05$.

Of the 15 subjects, eight were males and seven were females, ranging in age between 14 and 83 years. Eight subjects were between 14 and 32 years old while seven subjects were over 35 years of age. Only one subject had an admission blood alcohol concentration $100 > \text{mg/dl}$. The range of the Glasgow Coma Scale (Teasdale and Jennett, 1974) scores varied between 2 and 14.

Preliminary analyses showed that the group main effect was not statistically significant for any of the four physiologic variables. However, the observation main effect was significant relative to HR, MABP, MICP and CPP. Because significant differences existed among observations, further analysis of repeated measures was justified.

A weighted contrast compared baseline values on one hand to MH_{1-4} on the other. Significant differences were found for the variables of HR, MICP, and CPP. When baseline values of the dependent variables were

compared to ETTS₁₋₃ through another special contrast, significant differences were shown for HR, MABP, and CPP. Contrasts between MH₁₋₄ and ETTS₁₋₃ demonstrated significant differences for HR, MABP, MICP and CPP.

The main effect of the group was not significant for any of the physiologic variables. The observation main effect showed significant differences relative to MICP and CPP. This effect approached significance for MABP ($p = .07$). The group by observation interaction was significant only for MICP.

To further explore the recovery data trend analyses were performed for observations 9-13 of the protocol. Significant linear trends were found for MABP, MICP, and CPP. A significant quartic trend was also found for CPP.

Demographic findings relative to age distribution and sex tended to agree with the findings of others (Caveness, 1979; Kalsbeck et al, 1980). The extension in time of MH following the second and subsequent suctionings demonstrated that MICP could be decreased to lower than baseline levels. Extending the recovery recording time from one to five minutes provided adequate time for dependent variables to reach baseline values. Thus, the modified ETTS/MH procedure can be recommended as a more effective procedure in this Medical Center for suctioning closed head injured persons with resting MICPs of < 20 mmHg.

The linear and quadratic trends during the interventions of MH₁₋₄ and ETTS₁₋₃ reflected the parallel hemodynamic relationship between MABP and CPP observed when the cerebrovascular is autoregulated. The decreasing linear trend in MICP reflects the brain's microcirculatory response to decreased levels of $P_a O_2$ brought about by extending in time MHs three and four.

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PARENTAL RESPONSES TO EARLY CHILDHOOD CHRONIC ILLNESS: CONGENITAL HEART DISEASE

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The purpose of this study was to determine what factors were related to anxiety in parents of children with congenital heart disease. The Lazarus (1966) theory of psychological stress and coping was used as a theoretical framework. The study examined the extent that degree of anxiety in parents was related to a number of personal and situational factors, including: parental self-esteem, coping style, and perception of severity of the child's illness; family demographic characteristics; the occurrence of surgery for the cardiac defect; and the length of time since diagnosis. It was hypothesized that parents who experienced greater anxiety would (a) perceive their child's illness to be more severe, (b) have lower self-esteem, and (c) be more likely to use a sensitizing, rather than a repressive, coping style.

Forty-one couples (41 mothers and 41 fathers) with children under three years of age who had been diagnosed as having congenital heart disease within the year preceding this study and who were expected to need continuing treatment for the defect constituted the subjects for this study. The study subjects were drawn from the pediatric cardiology clinic of a large university hospital. A home visit was arranged in which the subjects completed an Information Questionnaire, a Perception of Severity of Illness Rating Scale (Perry, 1982), the Rosenberg Self-Esteem Scale (Rosenberg, 1965), and the Modified Repression-Sensitization Scale (Epstein & Fenz, 1967). Anxiety was measured using the State form of the State-Trait Anxiety Inventory (Spielberger, et al.,

1970). Forced order and step-wise multiple linear regression analyses were performed to determine predictors of parental anxiety. The findings supported the hypotheses related to perception of severity of illness and coping style. The hypothesis related to self-esteem was not supported. Of the other factors examined, only length of time since diagnosis was found to be a significant predictor of parental anxiety, with anxiety decreasing as the length of time increased. The findings of the study have implications for identifying parents at risk for experiencing high levels of anxiety and for targeting professional programs and resources to aid this vulnerable group. Intervention strategies which take into account identified factors could assist in reducing parental anxiety.

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THE POLICY AND POLITICS OF FLORENCE NIGHTINGALE

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At times, it seems that Florence Nightingale is old hat. More than 120 years after Notes On Nursing was written (Nightingale, 1860), one wonders what else can be said about the woman or her ideas. There is, however, a renewed interest in Nightingale, and close scrutiny of her writings reveals that we have just begun the inventory of her legacy to nursing. This paper uses the approach of policy analysis to examine Nightingale's work and her contribution to nursing. It is divided into three major parts: policy formation, policy implementation, and policy evaluation.

Policy formation looks at the factors that led Nightingale into the role of reformer. It proposes that the major influences were her personal needs and life experiences, her education, and her powers of observation and affinity for research. It is held that these three areas were integrated by Nightingale in such a way that the resulting ideas she developed for reform were necessary, timely, realistic, and thorough. The areas of reform that are examined are the practice of nursing, nursing education, and hospital management. Specifically, each area is described as it existed before Nightingale and is followed by a description of the changes instituted by her.

Policy implementation examines the basis of Nightingale's influence and political power that brought her proposed policy changes to fruition. Using Zey-Ferrell's classification (1979) of the major sources of power, it is argued that Nightingale's ability to institute change on a national level came from her knowledge and competency, her personal attributes (charisma), and from her

social position. The charge that she was overzealous and ruthless in her drive to reform the delivery of nursing care and hospital services is examined in the light of her religious values.

Policy evaluation looks at the accomplishments of Nightingale during her lifetime and their continued impact on the health care system today. Gains and losses for the nursing profession, and other health care professions, since Nightingale's time are outlined. Finally, her values and methods are examined for possible application to two of the major underdeveloped areas of present-day nursing--the need for well-defined, knowledge-based practice and the need for nursing to be included in the decision-making process of the health care system.

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A COMPARISON OF EMOTIONAL INDICATORS ON HUMAN-FIGURE AND SELF-FIGURE DRAWINGS OF LEUKEMIC AND HEALTHY CHILDREN

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A drawing captures symbolically on paper many of children's thoughts and feelings about themselves or of significant others, which they cannot express in speech or writing. "It makes a portion of the inner self visible" (Klepsch & Logie, 1982, p. 6). More is revealed by the content, which is determined by the way the child, consciously or unconsciously, perceives himself and significant others in his life.

This descriptive study sought to compare the emotional indicators leukemic and healthy children included in their human and self-figure drawings. Three sub-problems were investigated: (a) Are there significant differences in the number and/or type of emotional indicators children draw on the human-figure and self-figure drawings? (b) Are sex and/or age contributing factors in number and/or type of emotional indicators children include in their drawings? (c) Are the number and type of colors used in drawings significantly different between leukemic and healthy children?

The study sample was comprised of 40 randomly selected school-age children (8-12 years of age); 20 children with acute lymphocytic leukemia from a pediatric oncology clinic, and 20 healthy children from a neighborhood in Southern New England.

Children's human-figure and self-figure drawings were utilized as the data collection tools. The children were asked to draw a person (someone other than themselves) and then a picture of themselves. Reliability of

the investigator's scoring technique of children's drawings was $r = .96$.

Comments and descriptions of children's drawings were content analyzed. A 3-way ANOVA was utilized to determine if a significant difference existed between the mean emotional indicator scores on leukemic and healthy children's pictures. The data were analyzed for group, sex, and age differences. Chi-square analyses were conducted to identify if significant differences existed in the number and types of colors children used in their figure drawings.

Findings from the study indicated that:

1. Leukemic children included significantly more emotional indicators on both their human-figure and self-figure drawings than did the healthy children.
2. The types of emotional indicators on leukemic and healthy children's drawings differed significantly.
3. Sex and age were not contributing factors in the differences found between leukemic and healthy children's drawings.
4. Leukemic children used significantly fewer colors in their self-figure drawings than did the healthy children.

Types of emotional indicators identified on leukemic children's human-figure drawings included such items as poor integration of body parts, shading of the body and/or limbs, gross asymmetry of limbs and teeth, hands cut off, and arms clinging to sides. In addition, leukemic children included shading of the face, hands, or limbs; tiny figures; slanted figures; omission of nose, mouth, hands, feet, neck, and/or hair; crossed eyes; and short arms and/or legs on their self-figure drawings.

Results of the study suggest that the ramifications of a chronic illness such as leukemia produce numerous emotional stressors in the school-age child. Drawings provide an excellent medium for children to express their concerns, fears, and misconceptions about their illness. Drawings can provide the nurse with an assessment of children's ideas regarding their own situation. Once the data have been obtained and interpreted, the nurse must use the material to guide future intervention and interactions with the child and the family, and provide opportunities for further discussion and support.

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HOT FLUIDS FOR THE FEBRILE PATIENT: WARMING UP TO A NON-TRADITIONAL NURSING INTERVENTION

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Nursing literature contains few systematic studies of the effectiveness of various methods for reducing fever, even though clinical fever is a problem which frequently confronts the nurse. The purpose of this study was to demonstrate selected physiological phenomena basic to a rationale for a specific nursing intervention in the febrile patient. The intervention selected was that of administering an internal heat load, in the form of a hot drink, to the patient with fever. The rationale for the study was that an ingested heat load would raise the temperature of blood perfusing the hypothalamus, and that the threshold temperature for activating heat loss mechanisms would be achieved more rapidly than by metabolic heat alone.

Responses of temperature, sweating, and subjective comfort in afebrile and febrile subjects were measured after ingestion of a heat load. A convenience sample of 10 afebrile and 8 febrile subjects was selected. The afebrile group was composed of healthy volunteers with temperatures ranging from 36.25-36.65 C. The febrile groups included hospitalized patients with temperatures ranging from 36.80-38.65 C. A heat load consisting of 300 cc of tea at 64 C was administered to each subject. Tympanic membrane and rectal temperatures were monitored continuously until approximately 20 minutes after completion of the heat load. Skin temperatures were noted at one-minute intervals during the testing period. They were monitored with a surface temperature probe. Sweating responses were evaluated once before and after the heat load by the use of the starch-iodine test and the

plastic impression method. Subjective comfort responses also were obtained for subjects once before and after the heat load.

Values for tympanic temperature before and at the greatest evaluation following heat load were analyzed by t-tests for paired samples. Findings supported the hypothesis that there is a small, rapid increase of intracranial temperature in both the afebrile and febrile state after ingestion of a heat load. A comparison of tympanic temperature increases between afebrile and febrile groups utilizing a t-test for unpaired samples revealed no significant difference between groups in the amount of temperature increase. The time interval to reach half of the peak tympanic temperature elevation, however, was found to be significantly shorter for febrile subjects, indicating a more rapid initial increase of intracranial temperature in these subjects. Rectal temperature data, analyzed by the t-test for paired samples, supported the hypothesis that there would be no significant increase in rectal temperature in either afebrile or febrile groups after the heat load. Values for individual skin temperatures before and at the greatest elevation following heat load were analyzed by t-tests; resultant increases in temperatures were found to be significant for both afebrile and febrile subjects. Sweating responses were analyzed with the Wilcoxon matched-pairs signed-ranks test; a significant increase in the number of active sweat glands after heat load was shown for febrile subjects. Subjective comfort responses were analyzed by t-tests. Sensations of increased warmth and increased sweating after heat load were found to be significant for the afebrile, but not the febrile group.

Findings in this study demonstrate that a small internal heat load can raise intracranial temperature. The small amount of tympanic temperature increase was similar for both afebrile and febrile subjects, suggesting strongly that ingestion of a moderate amount of hot fluid

by febrile patients does not precipitate a response mechanism unique to febrile patients. Thus, data from this study raise the question of the advisability of nursing personnel giving only cold fluids to the febrile patient.

A second important implication for nursing care of the febrile patient relates to the finding that the small ingested heat load did activate heat loss mechanisms. Data indicated increased skin temperatures for afebrile and febrile subjects, increased number of active sweat glands for febrile subjects, and increased feelings of warmth and sweating for afebrile subjects. It is possible that the small increase of intracranial temperature after a hot drink could constitute an input to the thermoregulatory system that might otherwise be gained only with continued shivering. The aborting of shivering could be of considerable benefit, because the increase in metabolism--as much as 7 percent per degree centigrade (Kluger, 1980)--during shivering is detrimental to many patients. Data revealing activation of heat loss mechanisms after heat load, in conjunction with the known interdependence of sweating and shivering (Shaver, 1982), support the contention that a hot drink can abort shivering.

This study advances a significant implication for nursing care of the febrile patient in relation to the site for monitoring internal body temperature. The temperature measurement site should be selected in accordance with the purpose for measurement. Results of this study and the literature related to temperature measurement (Benzinger, 1969; Ilsley, Rutten, & Runciman, 1983) strongly suggest that rectal temperature measurement is not an appropriate site in situations where precise temperature changes need to be evaluated. Tympanic thermometry was found to be a simple, comfortable, and sensitive method for monitoring small internal body temperature changes.

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THE RELATION OF LOCUS OF CONTROL, SEX-ROLE IDENTITY, AND ASSERTIVENESS IN BACCALAUREATE NURSING STUDENTS

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The role of nursing is developing toward greater independence and responsibility, and nurses are being urged to exercise more self- and professional-determination (Ashley, 1976; Claus & Bailey, 1977; Donnelly, Mengel, & Sutterly, 1980; Heide, 1973; Herman, 1978; Mauksch, 1980; Sandford, 1978; Stuart, 1981). Self-confidence, assertiveness, and competency are necessary if nursing students are to successfully fulfill this contemporary role in nursing.

The aim of this study was to increase the understanding of the interrelations among the variables of personal control, sex-role identity, and assertiveness in nursing students. The objectives were to describe: (1) the profiles of locus of control, sex-role identity, and assertiveness of beginning and graduating nursing students, and (2) how these attributes are related in a nursing student sample.

Data were collected from 185 beginning and 125 graduating female nursing students enrolled in all five of the state-supported baccalaureate nursing programs affiliated with major health science centers in Texas. The Levenson (1972) locus of control scale measured internal control, powerful others, and chance. The Personal Attributes Questionnaire (Spence, Helmreich, & Stapp, 1974) measured sex-role identity on the masculinity and femininity scales. The Rathus (1973) Assertiveness Schedule assessed assertiveness. Reliability of the instruments was moderate to high ($r = .63$ to $.90$).

The demographic data supported the conclusion that the sample reflected the trends existing in the study population. The resulting profiles of locus of control, sex-role identity, and assertiveness serve as referent values in future studies.

Multiple correlation technique was used to determine the relations between the assertiveness and locus of control subscales together with sex-role identity subscales. Internal control and masculinity were significantly related to assertiveness. A canonical correlation technique revealed that locus of control and sex-role identity were minimally related. Both are necessary for a comprehensive explanation of assertiveness.

Multivariate analysis of variance (MANOVA) yielded significant differences for the control variable, school. The nonsignificant Status-by-School effect enabled testing of the main effect, status. The MANOVA and post hoc analyses yielded significant differences for status (beginning and graduating): graduating students scored significantly higher on assertiveness than beginning students.

The significant relations among the study variables warrant further attention. Experimental manipulation of variables to discover causality is recommended.

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NURSING FACULTY PERCEPTIONS OF AN INTEGRATED CURRICULUM AND IMPLEMENTATION OF THE CURRICULUM

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The purpose of this study was to examine nursing faculty perceptions of an integrated curriculum and the impact that the perceptions have upon the actual implementation of the integrated curriculum. The twofold problem investigated was:

1. To examine baccalaureate nursing faculty perceptions of the integrated curriculum in terms of (a) what their perceptions of the concept of the integrated curriculum are, (b) what they perceive their current integrated curriculum is, and (c) what they perceive their current integrated curriculum should be.
2. To examine the relation between the nursing faculty's perception of their current integrated curriculum and the actual implementation of the curriculum.

The problem was further investigated using as correlates the faculty members' professional experience, education, experience in curriculum planning, and involvement in planning the current integrated curriculum as they relate to faculty's perception of the curriculum.

Participants were faculty members from baccalaureate nursing programs that were accredited by the National League for Nursing. A survey was conducted to identify the programs that had a fully integrated curriculum design. Torres' definition (1974, p. 2) of an integrated curriculum ("an integrated curriculum refers to the unifying of the content in such a way that the

parts or specialties are no longer distinguishable") was used in the study. A stratified random sampling procedure was utilized to select 12 participating schools from the 111 respondents which indicated that they had a fully integrated curriculum.

The study included the development of the instruments for collecting the data and the administration of the instruments to the nursing faculty from the 12 schools. The first instrument, "Integrated Curriculum in Nursing Inventory," measured (a) nursing faculty perceptions of the concept, "integrated curriculum," (b) perceptions of what their current integrated curriculum is, and (c) perceptions of what their current integrated curriculum should be. The reliability coefficients (Cronbach's alpha) for the three parts of the inventory were: Part A, .929; Part B, .950; and Part C, .951 (N = 186). The second instrument, "Integrated Curriculum Implementation Inventory," was used to measure the degree of implementation of the integrated curriculum. This instrument consisted of criteria statements that were utilized by the investigator and two other raters in doing content analysis of the documents of both the curriculum and curriculum implementation of the 12 participating nursing schools. Each school was given a consensus implementation score. All instruments were pilot-tested prior to use.

Based on the findings of the study, the following conclusions were made:

1. There were significant differences in nursing faculties' perceptions of the integrated curriculum, both by geographical area groups and by school groups ($p < .01$). The dependent variable that contributed most to this significance was faculty perceptions of what their current integrated curriculum is.
2. A significant direct relationship existed between each of the parts of the "Integrated Curriculum

in Nursing Inventory:" Parts A and B, $r = .624$, $p < .05$; Parts A and C, $r = .819$, $p < .01$; Parts B and C, $r = .586$, $p < .05$.

3. There were significant differences in nursing faculty perceptions of their current integrated curriculums and the actual implementation of the curriculum ($p < .01$).
4. A significant direct relationship ($r = .685$, $p < .05$) existed between the actual implementation of the curriculum and the nursing faculty perceptions of what their current integrated curriculum is:
5. There were no significant differences in nursing faculty perceptions of the integrated curriculum in relation to educational level, professional experience, years of experience in planning nursing curriculum, and degree of participation in planning the current integrated curriculum.
6. The actual number of years the integrated curriculum had been implemented was unrelated to the degree of implementation of the curriculum.

Some recommendations include:

1. Graduate programs in nursing should include theory on curriculum development, including the integrated curriculum.
2. Nursing faculty understanding of the integrated curriculum should be included when interviewing faculty to teach in these programs.
3. Time needs to be allotted for faculty development and discussion of problems related to the implementation of the integrated curriculum.
4. Qualitative studies might aid in describing the problems that continue to exist in implementing the integrated curriculum.

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PROGRAMMATIC RESEARCH: A COLLABORATIVE MODEL FOR DEVELOPING NURSING THEORY

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Theory-building collaborative research is proposed as an alternative to the more competitive research efforts which are part of the traditional academic role. This paper describes a collaborative model of programmatic nursing research designed to build upon previous individual research and maximize contribution of individual investigators through a carefully designed four-year program. This program involves faculty in different clinical departments in examining a population and exploring health variables that contribute to nursing theory from perspectives unique to each contributing investigator's specialty: women's health care, maternity nursing, mental health nursing, and community health systems.

The program consists of four concurrent longitudinal studies, with a total sample size of over 600 urban families forming the nucleus. The focus is on the interaction between family relationships, social change, health variables, and health outcomes in the beginning family. Although the studies use separate cohorts, the patterns of investigation include two dimensions: longitudinally, marital and family relationships throughout pregnancy and early parenthood are examined with an exploration of the effect of the parent on the child and the effect of the child on the family; cross-sectionally, the effects of social, psychological, and physiological assessors at various stages of the perinatal period are

explored. The investigations are designed specifically to contribute to the theoretical constructs of attachments and interactions within the family, social support, and stress. The program is also designed to make methodological contributions through instrument development and validity testing of existing measures.

Four issues were identified whose management may be fundamental to any successful collaborative research program among multiple investigators. The issues are: (1) differences in individuals' value systems; (2) conflicts between individual and group goals; (3) variations in individuals' commitment to the program, vis-a-vis other professional demands; and (4) conflicts over control and ownership. The importance of recognizing and dealing with these issues is accentuated by the interdependence of the projects in programmatic research, but the issues are likely to surface in other types of collaborative arrangements as well.

Biweekly work sessions provided opportunities for discussing and resolving problems that arose in implementing the program. In these sessions the following strategies for dealing with the collaboration issues were used and found to be effective:

1. Early organizational planning to define group goals and to identify potential conflicts between individual and group goals.
2. Acknowledgment of potential conflicts and variations in individual expectations and commitments.
3. Development of a plan whereby the team members help each other achieve individual goals and permits flexibility in level of commitment without jeopardizing the quality of the team effort.
4. Open discussion of power issues and sharing of leadership.

PARENTAL PERCEPTIONS OF INFANT BEHAVIOR AND RHYTHMIC PATTERNS OF THE PARENTS AND THE INFANT

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Parental perceptions of the infant can affect parent-child interactions as well as the development of the child (Blank, 1964; Broussard and Hartner, 1971; Snyder, Eyres, & Barnard, 1979). Parent-infant interactions are complex in nature (Sander, Stechler, Julia, & Burns, 1976); therefore, it is important for nursing to consider the various factors that may influence parental perceptions and interactions. This study identified the individual phenomena of personal tempo as potentially influencing parental perceptions of their infant.

The purpose of this descriptive correlational study was to identify rhythmic patterns in parents and infants that contribute to synchrony or dysynchrony between them. These rhythmic patterns were then related to parents' perceptions of their infants.

Conceptualized from Newman's (1979) framework for nursing, personal tempo, as measured by rate of finger tapping, and time perception, as measured by production of a time interval, were considered components of the parents' rhythmic structure. Braun (1927) found that the relative speed of finger tapping for each subject was consistent over a 3-day period ($r = .87$ to $.94$). Production of intervals of clock time was identified as a reliable

instrument for measurement of time perception. The test-retest reliability of production was .62 to .92 (Clausen, 1950). Sleep-wake activity, as recorded by parents on the Nursing Child Assessment Sleep/Activity Record (Barnard, 1979), was used to measure the infant's rhythmic structure. A dysynchrony score was produced from these parent and infant tempo scores.

The parents' perceptions of their infant were measured by the Perception of Baby Temperament (PBT) scale (Pedersen, Zaslow, Cain, Anderson, & Thomas, 1977). This card-sort procedure, which has a split-half reliability of .68, measures perception of the baby's mood, rhythmicity, activity, approach, and adaptability. A second instrument was developed for the study, the Parent Report of Infant Behavior (PRIB), which measured the parents' perception of their infant as compared to their idea of an average baby. The items included perceptions of amount of sleep, activity, crying, care time, difficulty in feeding, and regularity of schedule. Experts in the field of infant behavior evaluated items for content validity.

A self-selected sample of volunteers from a convenience sample was chosen. The sample included 100 parents of 50 healthy 6-month-olds. Data were collected by self-administered questionnaires; tempo measurements were taken by data collectors during home visits. All variables were examined by descriptive analysis as well as by Pearson product moment correlations. Multiple regression was used to analyze the relationship between discrepancies of parental perceptions and personal tempo. The dependent t-test for matched pairs was used to analyze differences between mothers' and fathers' responses for all variables.

Support was found for the relationship between activity dysynchrony and perception discrepancies for the mothers ($r = .37, p < .01$ and $r = .24, p < .01$). Fathers' perceptions of infants varied from the mothers' and were

less influenced by their rhythmic structures. Parental age, experience with children, and the birth order of the infant were found to correlate with perceptions. Fathers saw their babies as crying more than the mothers did ($t = -3.46, p < .01$), but the mothers saw the babies as needing more care than the fathers did ($t = 6.05, p < .01$). Additional statistics compared working and non-working mothers. The employed mothers had a higher personal tempo ($t(48) = 2.49, p < .05$), and they perceived their babies as crying less and needing less care than did the unemployed mothers. The families were grouped according to synchrony patterns (4 types) and analysis of variance was made. Fathers and mothers in synchrony, but with the baby not, accounted for the most variance in the perception discrepancy scores.

This study demonstrated that the evaluation of family synchrony and parental perceptions is useful to nurses in the promotion of optimum infant development. Appropriate interventions based on findings can be planned to improve parent-child interactions during well-child conferences. Family behavior patterns may be altered to increase synchrony within the family that demonstrates disruptive patterns. The perception instruments can also be used by the nurse to increase parent awareness of infant behavior. This study reinforced the need for prenatal classes, especially for new parents who have not had previous experience with babies.

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BLOOD PRESSURE AND HEART RATE CHANGES DURING CARDIAC CATHETERIZATION

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Cardiac catheterization is an invasive diagnostic procedure. During this procedure there is constant monitoring of the heart's internal pressures, rate, and rhythm. Several studies have suggested that certain phases of the procedure are more painful and stressful than others. Injection of the local anesthetic, insertion of the catheter, table turning, dye injection, and left ventriculogram were cited as most stressful.

The purpose of this study was to compare the blood pressure and heart rate changes during an acute clinical procedure with those occurring during verbal communication. Recent studies (Friedman, et al., 1982; Long, et al., 1982; Lynch, et al., 1980, 1981, 1982; & Thomas, et al., 1975, 1982) have shown significant increases in heart rate and blood pressure during verbal communication in

non-stressful situations. In this study the cardiovascular effect of the clinical procedure was evaluated. In addition, the effects of verbal communication during the procedure were examined. Changes in peripheral blood pressure and heart rate during specific phases of the cardiac catheterization were studied and compared with the effects of casual conversation on the day after cardiac catheterization. A convenience sample of 14 subjects who were scheduled for cardiac catheterization procedures were recruited to participate in this study. After explaining the study, patients' informed written consent was obtained. Blood pressure (BP) and heart rate (HR) were obtained using an automatic oscillometric BP device, the Dinamap 845. BP and HR were measured at selected critical intervals throughout the catheterization.

Subjects were asked to talk for two minutes during the catheterizations. This period was preceded and followed by two-minute quiet resting periods. On the following day the same nurse who was present at the catheterization visited the patient's room and recorded BP and HR during a six minute series: two minutes quiet rest, two minutes talk, two minutes rest.

The highest BP obtained during catheterization occurred with the injection of local anesthetic and left ventriculogram. The highest HR obtained during catheterization occurred at the time of the left ventriculogram. The test selected to examine the differences in HR and BP was the Newman-Kuels. Blood pressures taken while talking to the nurse the next day were significantly lower ($p < .05$) than those taken during catheterization. The heart rates during left ventriculogram were significantly higher ($p < .05$) than during other stressful events.

These results show that BP and HR obtained during the most stressful events of a cardiac catheterization are no higher than those obtained during casual conversation

with a nurse. Even a casual conversation between a nurse and patient during a procedure such as a cardiac catheterization could have direct consequences on the patient's BP. While the presence of the nurse is supportive, the patient should not be encouraged to talk during an acute clinical procedure.

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