

# Hallmarks of success in nursing research

Assessment of nursing research accomplishments revealed three hallmarks of success: (1) identification of the boundaries of nursing research, (2) explication of the types of research needed by the professional discipline of nursing, and (3) delineation of research activities appropriate for nurses according to educational preparation. Assessment of the current state of nursing research resulted in identification of three major issues: (1) elimination of obstacles to nursing research, (2) acceptance of multiple modes of inquiry, and (3) utilization of nursing research findings in clinical practice. The successful resolution of these issues should represent three future hallmarks of success in nursing research.

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ONLY RECENTLY HAS the nursing literature reflected an optimistic view of the discipline. This is especially evident in the area of theory development, but less so in writings about nursing research. Yet even a cursory review of books and journals reveals steady increases in the quality of nursing research reports and discourse on issues surrounding the conduct of nursing research.

Past accomplishments that may be considered hallmarks of success in nursing research are the identification of the boundaries of nursing research, the explication of the types of research needed by professional disciplines, and the delineation of research activities appropriate for nurses prepared in different types of educational programs.

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## BOUNDARIES OF NURSING RESEARCH

The first and perhaps most important hallmark of success in nursing research is the identification of its boundaries. These boundaries have been set by the metaparadigm and the various paradigms of nursing. The metaparadigm is made up of the central concepts and themes that represent the phenomena of interest to the discipline. The paradigms are represented by diverse conceptual models of nursing that provide distinctive contexts for the metaparadigm concepts and themes.<sup>1</sup>

### Metaparadigm concepts and themes

A review of the nursing theory and research literature reveals a consensus about the central concepts of the discipline, which are person, environment, health, and nursing.<sup>2</sup> Person refers to the recipient of care; environment, to the significant others and the surroundings of the recipient of care, as well as to the setting in which nursing care occurs; health, to the wellness or illness state of the recipient at the time that nursing occurs; and nursing, to the actions taken by nurses on behalf of or in conjunction with the recipient of care.

The relationships between the metaparadigm concepts are explicated in three themes:

- principles and laws that govern the life-process, well-being, and optimum function of human beings, sick or well;
- patterning of human behavior in interaction with the environment in normal

life events and critical life situations; and

- process by which positive changes in health status are effected.<sup>3(p113),4(p180)</sup>

The metaparadigm concepts and themes identify the most abstract boundaries of nursing research and have provided a general direction for studies. For example, the concept of health was the subject of an inquiry by Smith.<sup>5</sup> The relationship between the concepts of person and health—the concern of the first theme—has been the focus of the many nursing studies that explore individuals' behaviors during periods of wellness and illness. Typical examples are Wood's<sup>6</sup> prospective study of the impact of proliferation of roles held by women on their health status and Riffes's<sup>7</sup> study of changes in self-esteem experienced by hospitalized children.

The relationships between the concepts of person, environment, and health—the concern of the second theme—are addressed by research that examines individuals' behavioral patterns as they are influenced by environmental factors during periods of wellness and illness. Hurley's<sup>8</sup> study of spouses' communication patterns as a manifestation of family system conflict is one example. Another example is Hanson's<sup>9</sup> study of the association between demographic characteristics of single custodial fathers and father-child nurturance.

The relationships between the person, health, and nursing—the concern of the third theme—are addressed by studies of nursing processes and the effects of nursing actions. These studies of nursing practice address "the interaction of nurses,

acting as nurses, and clients, be they well or ill."<sup>10(p184)</sup> The 145 such studies published in *Nursing Research* from 1970 to 1979 were identified by O'Connell.<sup>10</sup>

### Conceptual models of nursing

Conceptual models of nursing provide distinctive perspectives for the study of the metaparadigm concepts and themes. As beginning paradigms, the models suggest diverse theoretical, instrumental, and methodological rules for research. Johnson's<sup>11</sup> Behavioral System Model serves as one example. It views the person as a behavioral system composed of seven interacting subsystems. The behavioral system is said to interact with the environment. Health is defined as behavioral system stability and balance. Nursing is regarded as an external regulatory force. The implicit rules of Johnson's conceptual model require investigations of subsystem behaviors associated with behavioral system balance, as well as of nursing interventions designed to promote system balance and stability. Holaday's research is exemplary. One of her studies focused on the achievement subsystem behaviors of chronically ill children.<sup>12</sup> Another study focused on the attachment subsystem by investigating mothers' responses to the crying of their chronically ill infants.<sup>13</sup>

Another example is Orem's<sup>14</sup> Self-Care Model, which views the person as a self-care agent. The environment provides resources for learning self-care. Health is defined as the ability to care for oneself. Nursing is regarded as actions designed to promote the self-care abilities of those who have self-care deficits. The rules implied by

Orem's conceptual model direct researchers to the exploration of factors influencing self-care ability, as well as to studies of the effectiveness of nursing actions designed to assist clients to overcome self-care deficits. Exemplary studies have investigated the validity and reliability of instruments designed to measure self-care agency and to measure the quality of nursing care.<sup>15-17</sup>

The first hallmark of success in nursing research, then, is the identification of its boundaries. Simply stated, the phenomena examined through nursing research are the nursing care recipient, the health status of the recipient, the nursing care agent, and the environment in which the nursing care occurs. These phenomena are given distinctive frames of reference for research by the conceptual models of nursing.

### TYPES OF NURSING RESEARCH

The second hallmark of success in nursing research is the explication of the types of research needed by the discipline of nursing. Donaldson and Crowley<sup>3</sup> classified disciplines as either academic or professional. Academic disciplines encompass sciences, such as physics, physiology, and sociology, and liberal arts, such as mathematics, history, and philosophy. Professional disciplines include law, medicine, and nursing, among others. According to Donaldson and Crowley, "The aim of academic disciplines is to know, and their theories are descriptive in nature. In contrast, professional disciplines . . . are directed toward practical aims and thus generate prescriptive as well as descriptive

- 4 theories."<sup>3(p15)</sup> The two kinds of theories needed by professional disciplines—descriptive and prescriptive—are developed by basic, applied, and clinical research.

### Basic research

Descriptive nursing theories include the metaparadigm concepts of person, environment, and health as they are addressed by the theme of the principles and laws of the life process and the theme of the patterning of human behavior in interaction with the environment. Such theories are generated and tested by basic and applied research. Basic research, also called theoretical or pure research, provides a general understanding of human behavior; it tests and expands knowledge, without regard to its later use.<sup>18</sup> Fitzpatrick's<sup>19</sup> studies of time perception are examples of basic nursing research derived from Rogers'<sup>20</sup> Life Process Model of Nursing. These studies are part of a larger program of basic research designed to develop the life perspective rhythm theory.

### Applied research

Applied research "answers questions related to the applicability of basic theories in practical situations."<sup>3(p115)</sup> This type of research tests the practical limits of descriptive theories, but does not examine the efficacy of actions taken by practitioners. For example, Kishi's<sup>21</sup> study of the relationship between communication patterns used by health care professionals and client recall of information tested the limits and applicability of Flanders' Interaction

Analysis System, an educational theory, in well-baby clinics.

### Clinical research

Prescriptive nursing theories, in contrast to descriptive theories, include all four metaparadigm concepts, as they are addressed by the theme of the effects of nursing processes on health status. These theories are generated by clinical research, which examines the effects of actual implementation of knowledge in clinical practice situations. Ziemer,<sup>22</sup> for example, conducted clinical research to determine the differential effects of information about procedures, sensations, and coping strategies associated with abdominal surgery on the postoperative use of coping strategies and on postoperative complications. This study investigated the implementation of knowledge of cognitive imagery developed through basic and applied research. The findings of basic research, conducted by social psychologists and nurses, revealed that information that allows the person to form a cognitive image of an event helps the person to know how to behave during the event.<sup>23</sup> Applied research conducted by nurses revealed that this knowledge is applicable in various clinical situations, including those where patients are undergoing breast and pelvic examinations, cholecystectomy, endoscopic examination, and orthopedic cast removal.<sup>24</sup>

In summary, the second hallmark of success in nursing research is the clear explication of the distinctions among basic, applied, and clinical studies. All three types of research are needed to develop the descriptive and prescriptive theories required by the professional discipline of nursing.

## APPROPRIATE RESEARCH ACTIVITIES

The third hallmark of success in nursing research is the delineation of research activities appropriate for nurses prepared in different types of education programs. This work was done by the American Nurses' Association Commission on Nurs-

ing Research and was published in 1981 in a pamphlet entitled *Guidelines for the Investigative Function of Nurses*.<sup>25</sup> The activities appropriate for graduates of associate degree, baccalaureate, master's degree, and doctoral nursing programs are listed in Table 1.

These activities are not meant to be an exhaustive list. Moreover, "the research

Table 1. Nursing research activities by educational preparation

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| <p><b>Activities Appropriate for Graduates of Associate Degree Nursing Programs</b></p> <ol style="list-style-type: none"> <li>1. Demonstrates awareness of the value or relevance of research in nursing</li> <li>2. Assists in identifying problem areas in nursing practice</li> <li>3. Assists in collecting data within an established structured format</li> </ol> <p><b>Activities Appropriate for Graduates of Baccalaureate Nursing Programs</b></p> <ol style="list-style-type: none"> <li>1. Reads, interprets, and evaluates research for applicability to nursing practice</li> <li>2. Identifies nursing problems that need to be investigated and participates in the implementation of scientific studies</li> <li>3. Uses nursing practice as a means of gathering data for refining and extending practice</li> <li>4. Applies established findings of nursing and other health-related research to nursing practice</li> <li>5. Shares research findings with colleagues</li> </ol> <p><b>Activities Appropriate for Graduates of Master's Degree Nursing Programs</b></p> <ol style="list-style-type: none"> <li>1. Analyzes and reformulates nursing practice problems so that scientific knowledge and scientific methods can be used to find solutions</li> <li>2. Enhances the quality and clinical relevance of nursing research by providing expertise in clinical problems and by providing knowledge about the way in which clinical services are delivered</li> <li>3. Facilitates investigations of problems in clinical settings through such activities as contributing to a climate supportive of investigative activities, collaborating with others in investigations, and enhancing nursing's access to clients and data</li> <li>4. Conducts investigations for the purpose of monitoring the quality of the practice of nursing in a clinical setting</li> <li>5. Assists others in applying scientific knowledge in nursing practice</li> </ol> <p><b>Activities Appropriate for Graduates of Practice-oriented Doctoral Programs, Such as Doctor of Nursing Science Programs</b></p> <ol style="list-style-type: none"> <li>1. Provides leadership for the integration of scientific knowledge with other sources of knowledge for the advancement of practice</li> <li>2. Conducts investigations to evaluate the contribution of nursing activities to the well-being of clients</li> <li>3. Develops methods to monitor the quality of the practice of nursing in a clinical setting and to evaluate contributions of nursing activities to the well-being of clients</li> </ol> <p><b>Activities Appropriate for Graduates of Research-Oriented Doctoral Programs (PhD Programs)</b></p> <ol style="list-style-type: none"> <li>1. Develops theoretical explanations of phenomena relevant to nursing by empirical research and analytical processes</li> <li>2. Uses analytical and empirical methods to discover ways to modify or extend existing scientific knowledge so that it is relevant to nursing</li> <li>3. Develops methods for scientific inquiry of phenomena relevant to nursing</li> </ol> |
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Adapted with permission from American Nurses' Association Commission on Nursing Research. *Guidelines for the Investigative Function of Nurses*. Kansas City, Mo, ANA, 1981, pp. 2-3.

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activities described for each type of preparation are not intended to be restrictive. Some nurses may have the capacities to perform investigative activities beyond their preparation.<sup>25(p2)</sup>

The most important implication of these guidelines is that they provide mechanisms that facilitate a close connection between research and clinical nursing problems. Another important implication is that "no one group of nurses is expected to assume responsibility for the total process of developing knowledge and ensuring its impact on the practice of nursing."<sup>25(p2)</sup> This means that not all nurses must or should conduct research. Rather, the guidelines have contributed to the understanding that all nurses can play *some* part in the generation, dissemination, acquisition, and utilization of nursing research. Certainly this is a significant hallmark of success.

## FUTURE HALLMARKS OF SUCCESS IN NURSING RESEARCH

Attention is now turned to those nursing research issues that, if resolved successfully, should become future hallmarks of success. Continuing assessment of the state of nursing research has resulted in the identification of three major issues requiring attention now and in the future.

### Elimination of obstacles to nursing research

The first issue concerns obstacles to nursing research. Many authors have cited numerous obstacles to the conduct of

nursing research. These obstacles can be summarized as follows:

- lack of socialization to appropriate roles for research activities;
- lack of academic preparation for nursing research;
- misunderstanding of the meaning of creativity in science; and
- lack of time to conduct research.<sup>26</sup>

Significant progress has been made in the past several years in establishing nursing as a discipline with a corps of scholars leading its advancement. This scholarly influence is perhaps the most critical factor involved in the elimination of obstacles to nursing research because socialization to

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appropriate research roles is closely tied to discipline status. Members of disciplines are socialized to understand their responsibilities for knowledge development through research. Socialization occurs through opportunities to enact the various roles of neophyte and accomplished scholars, including protégé, mentor, colleague, coauthor, and peer pal. The present corps of nurse scholars is beginning to assume these roles not only in academic settings but also in clinical agencies. However, more fully socialized scholars are needed.

Another factor that will help eliminate the obstacle of socialization, as well as obstacles posed by lack of academic preparation, is the acceptance of the guidelines

for investigative functions of nurses prepared in different nursing education programs, as summarized in Table 1. The major contribution of the guidelines to overcoming these obstacles is the delineation of what is appropriate participation in research activities. Thus, expectations for research activities should become more realistic. It is crucial that these guidelines be accepted and followed.

Adherence to the guidelines will also play a part in eliminating the obstacle posed by the misunderstanding of the meaning of creativity in science. The guidelines stipulate that all nurses are prepared to participate in some aspect of the generation, dissemination, acquisition, and utilization of nursing research. This, coupled with acceptance of the fact that all research activities are creative,<sup>27</sup> leads to the conclusion that all nurses can participate in nursing research and can do so in a creative manner.

Elimination of the obstacle posed by lack of time for research will occur as nurses are more fully socialized to their appropriate research roles, as the number of nurses with academic preparation for various research activities increases, as nurses learn to capitalize on the resources for research available in their work settings, and especially as nurses learn to combine research with their other work responsibilities.

Obstacles to research are salient issues today, even though some progress has been made, and most likely will be issues of the future. The means to eliminate the obstacles exist, and their use should become a future hallmark of success in nursing research.

### Acceptance of multiple modes of inquiry

The second issue concerns the modes of inquiry needed to develop nursing knowledge. Lately, there has been some concern expressed about the use of empirical modes of inquiry, especially deductive, quantitative methods, to investigate nursing phenomena. Those who have questioned the exclusive use of these methods, including Munhall,<sup>28</sup> claim that traditional scientific methods are incompatible with nursing's individual-oriented, humanistic, holistic view of the recipient of care. They maintain that philosophical inquiry and inductive qualitative methods of empiricism are more appropriate. There is some validity in their position, for the components-of-variance model of statistics, which underlies measurement theory and the analysis of variance used in quantitative research, is an additive model that is logically inconsistent with the assumption of holism stating that the whole is greater than the sum of parts.<sup>29</sup>

Gortner<sup>30</sup> argued for the retention of scientific, quantitative methods as well as acceptance of other methods. She stated:

Scientific approaches to the study of human health and illness need not eliminate the features of design and methods that have served other sciences well. The logic inherent in the scientific method and the discipline of the method can aid in the identification of correlates of healthy behavior and illness. . . . The profession would be unwise to reject scientific techniques now because of fear of dehumanization or concerns about the validity of analytical approaches. The hypothetico-deductive methods of science can be as much a part of the nursing research repertoire as are the

descriptive, inductive, and theory-generating forms.<sup>30(pp18-19)</sup>

Silva and Rothbart<sup>31</sup> also argued for acceptance of multiple modes of inquiry. They pointed out that reliance on one method, such as that advocated by logical empiricism, is not in keeping with contemporary philosophies of science, especially historicism.

The resolution of this issue is closely tied to the understanding and acceptance of the various types of knowledge needed for nursing practice and to the linkage of theory with research. Carper<sup>32</sup> has put forth a comprehensive typology of knowledge needed for nursing practice. She maintained that nursing "depends on the scientific knowledge of human behavior in health and in illness, the esthetic perception of significant human experiences, a personal understanding of the unique individuality of the self and the capacity to make choices within concrete situations involving particular moral judgments."<sup>32(p22)</sup> Thus, nursing practice requires four kinds of knowledge: (1) scientific, or empirical knowledge; (2) ethical knowledge; (3) esthetic knowledge, or knowledge of the art of nursing; and (4) personal knowledge of the therapeutic use of self.

Scientific knowledge is factual; descriptive, explanatory, or predictive; generalizable; and publicly verifiable. Its most salient feature is objectivity. This type of knowledge is developed through empirical methods. These methods include both inductive and deductive approaches that employ both qualitative and quantitative data analysis techniques. The selection of method depends only on the question being asked

and the current state of knowledge development. The method does not take precedence. When little or nothing is known about a phenomenon, inductive, qualitative methods are appropriate. When enough is known that hypotheses may be formulated and tested, deductive, quantitative methods are the ones to use.

Ethical knowledge is knowledge of the values of nurses and nursing, as well as knowledge of methods used to solve ethical dilemmas and to formulate moral judgments. This type of knowledge is most appropriately developed through philosophical (or ethical) inquiry. This mode of inquiry uses critical discussion rather than empirical methods to organize phenomena coherently.

Esthetic knowledge is knowledge of the art of nursing. This type of knowledge includes technology, but also extends to perception of what is significant about the individual client's behavior. The focus on the individual in esthetic knowledge tends to preclude the use of traditional scientific approaches that deal with objectively determined group data. Omery<sup>33</sup> and Oiler<sup>34</sup> have suggested that phenomenology may be an appropriate mode of inquiry to investigate the individual's perceptions of lived experiences. This method is more subjective, though no less rigorous, than the traditional scientific method. It is an appropriate approach to development of esthetic knowledge.

Knowledge of the therapeutic use of self is "concerned with the knowing, encountering, and actualizing of the concrete, individual self" and emphasizes "wholeness and integrity in the personal encounter"<sup>32(pp18,20)</sup> between client and nurse. Mul-



tiple modes of inquiry are appropriate to develop this type of knowledge, including phenomenology, philosophical inquiry, and traditional scientific methods.

There is, then, no one mode of inquiry that will provide all four types of nursing knowledge. Acceptance of multiple modes of inquiry, coupled with use of each mode in an appropriate manner, should be a future hallmark of success in nursing research.

### **Utilization of nursing research findings**

The third issue concerns the utilization of research findings in nursing practice. In the past, many nurses expected all nursing research to have immediate applicability for practice. This expectation probably was based on a misunderstanding of knowledge utilization. In other disciplines, it is a well-known fact that the actual use of research findings often is decades after generation of basic research findings.<sup>35</sup>

Nurses are beginning to understand and accept this fact. Understanding and acceptance have been greatly facilitated by publication and dissemination of criteria for assessing the adequacy of research findings for nursing practice. These criteria encompass evaluation of the scientific merit of studies, assessment of the extent to which findings have been replicated, evaluation of the clinical relevance of studies, and evaluation of the outcomes of clinical use of study findings.<sup>36</sup>

The significance of these criteria lies in the emphasis placed on evaluation of the clinical relevance of studies. Once it has been determined that the research is scien-

tifically meritorious and that findings have been replicated, clinical relevance must be evaluated. Evaluation of clinical merit is the most obvious place to begin. This requires a determination of the degree to which the research addresses a significant clinical practice problem.

After clinical merit has been established, it is necessary to determine the extent to which the nurse has the legal ability to control the application of the research findings in the form of nursing actions and the measurement of outcomes. Haller, Reynolds, and Horsely<sup>36</sup> pointed out that, in practice settings, control frequently requires collaborative decision making between nurses and other health care professionals.

Finally, it is imperative to evaluate the feasibility of implementing research findings in a given clinical setting. Feasibility is determined by an assessment of the resources needed to establish a new procedure, including the time needed to learn and implement the innovation; the number, type, and expertise of personnel required for its implementation; and the cost of staff development, equipment, and laboratory expenses.

Evaluation of the clinical relevance of nursing research is an expected competency of graduates of baccalaureate and higher degree, nursing education programs. The use of clinically relevant research findings is an appropriate expectation for all nurses. Achievement of research-based nursing practice through the utilization of nursing research findings should be a future hallmark of success in nursing research.

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10 The means are now available to attain these three future hallmarks of success in nursing research. It is conceivable that they will be attained by the year 2000, so that

nursing's entry into the twenty-first century will be marked by the identification of new nursing research issues and by the achievement of additional hallmarks of success.

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