

Mentoring Undergraduate Nursing Students Assessing the State of the Science

Laurie E. Dorsey, MSN, RN
Constance M. Baker, EdD, RN

Academic mentoring is frequently offered as one strategy to facilitate student success, but the research evidence may be wanting. The authors present an integrative review of the data-based scholarship published between 1992 and 2002. Analysis involved synthesizing the research evidence and presenting findings within a conceptual framework. Research priorities are offered.

Academic leaders are increasingly concerned about the retention rates of students and have identified 3 major reasons for student attrition: vague educational goals, dissatisfaction with the academic program, and unclear career objectives.¹ Mentoring has been offered as an effective strategy to increase retention of nursing students because it addresses several causes of student attrition and delayed graduation (eg, inadequate academic preparation for college, lack of knowledge about social or academic resources, and absence of a comfortable milieu).²

The Concept of Mentoring

The notion of mentoring originated from Homer's *Odyssey* in ancient Greek Mythology.³ In 1200 BC, Odysseus was leaving for the siege of Troy and he appointed his friend, Mentor, to be a surrogate father to his son, Telemachus. The craft guilds founded in the Middle Ages show examples of mentoring when young men were apprenticed to master craftsmen to learn the skills, culture, and values in preparation for manhood. Over the years, these informal relationships have helped to advance careers and facilitate skill acquisition.⁴

A mentor is defined as a wise and trusted advisor, counselor, or teacher who has something to offer that meets the immediate needs and/or future needs of another. Mentoring is a planned pairing of a more experi-

enced person with a lesser skilled individual for the purpose of achieving mutually agreed upon outcomes. It is a partnership in which both individuals share in the personal growth process and the personal development of one another.⁴ The outcomes of mentoring in nursing are career progression, development of new investigators, empowerment, expanding professional knowledge, generativity, increasing numbers of minority nurses in graduate programs, institutional stability, continuity, and professional socialization.⁵ One outcome of mentoring that needs to be examined is the association between a mentoring relationship and student retention.

Traditional mentoring relationships serve 2 functions: a career function and a psychosocial function.⁶ Career functions involve teaching, coaching, sponsoring, protecting, and challenging work assignments. Psychosocial functions involve role modeling, acceptance, counseling, and friendship. The career functions provide guidance to the protégé and facilitate success. The psychosocial functions provide emotional support to the protégé, and help to build self-confidence and feelings of self-worth. These functions are addressed through various program types, a

range of durations, specified relationships, and face-to-face and online. These functions are important when considering mentoring as a tool for retention because a mentoring relationship could help the student be successful in his or her education program and cope with the stresses of schooling.

Methodology

This article reports an integrative review of the data-based scholarship published between 1992 and 2002. Attention is given to the process of conducting an integrative review, the data extraction tool, and the data analysis process leading to a conceptual framework for the study of mentoring in nursing. An integrative review methodology is used to synthesize the research evidence in mentoring and retention of undergraduate nursing students and to suggest new directions for future research.⁷⁻⁹ Four approaches were used to identify relevant literature. A computerized search of Cumulative Index of Nursing and Allied Health Literature (CINAHL), MEDLINE, ERIC, EBSCOHOST, and Health Source was conducted using several keywords: mentoring, mentor, undergraduate nursing student, attri-

Authors' Affiliations: Assistant Professor (Ms Dorsey), Ivy Tech State College, Madison, Ind; Professor (Dr Baker), Nursing Administration/Teacher Education and Director, Graduate Programs, The Center on Philanthropy, Indiana University, Indianapolis.

Corresponding Author: Dr Baker, Indiana University, 902 W New York St, E52129, Indianapolis, IN 46202-5197 (cbaker1@iupui.edu).

tion, retention, satisfaction, peer, and faculty. The Indiana University computerized library catalog and the World Wide Web were searched using the same keywords. Relevant references in research articles were identified and assessed.

A data extraction tool was developed following the guidelines developed by health science researchers.¹⁰ The tool is available from the authors. Attention was given to conceptual and theoretical frameworks, research methodology, and findings. Themes and content from the articles were identified and categorized according to purposes and types of mentoring programs, processes of mentoring students, and program outcomes. An assessment of the state of the science focuses on conceptualization of mentoring and theoretical links, types, and processes of mentoring programs, methodological issues, contextual factors, and research priorities.

Findings

The literature search yielded over 90 citations, 51 of which were published between 1991 and 2003, 34 data-based articles, 6 integrative reviews, 2 concept papers, 7 opinion pieces, and 2 books. Among the 34 data-based articles were 16 presenting research on mentoring programs in undergraduate nursing education programs and published between 1992 and 2002. Nine of the articles were published between 1992 and 1999, the remaining 7 were published in 2000 and 2001, reflecting an increasing interest in mentoring undergraduate nursing students. The geographical distribution of the 16 studies was 6 each from the United Kingdom and the United States, 2 from Australia, and 1 each from Hong Kong and Canada. The purposes of the 16 articles ranged from psychosocial support and academic success to modeling professional behaviors and increasing retention (Figure 1).

A definition of mentoring is offered in only half of the articles and ranges from simple to comprehensive. Essentially, mentoring is a nurturing process in which a more skilled or experienced person, serving as a role model, teaches, sponsors, encourages, counsels, and befriends a less skilled

person for the purpose of promoting the latter's professional and personal development. This definition has the components necessary to address the role that mentoring can play in nursing in assisting the student to be successful and will be used as the conceptual definition for the integrative review.

Analysis

Data-based articles were critiqued to discern the association of mentoring program characteristics with program dynamics and outcomes of the programs for the various stakeholders. The adopted framework derives from

an adaptation of Donabedian's linear structure-process-outcome model into a dynamic interactive model; however, "reciprocal directions of influence" are used at this early stage of synthesizing the literature.¹¹ The dimensions specified within each variable come from the research literature. Figure 2 reflects the conceptual framework and the dimensions selected to represent the three major variables and the interaction among them.

Structure of Mentoring Programs

Structure of mentoring programs refer to the form or arrangement that the mentoring program takes. Attention is

- Alvarez A, Abriam-Yago K. Mentoring undergraduate ethnic minority students: strategy for retention. *J Nurs Educ.* 1993;32(5):230-232.
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Figure 1. Research on mentoring undergraduate nursing students: 1992 to 2002.

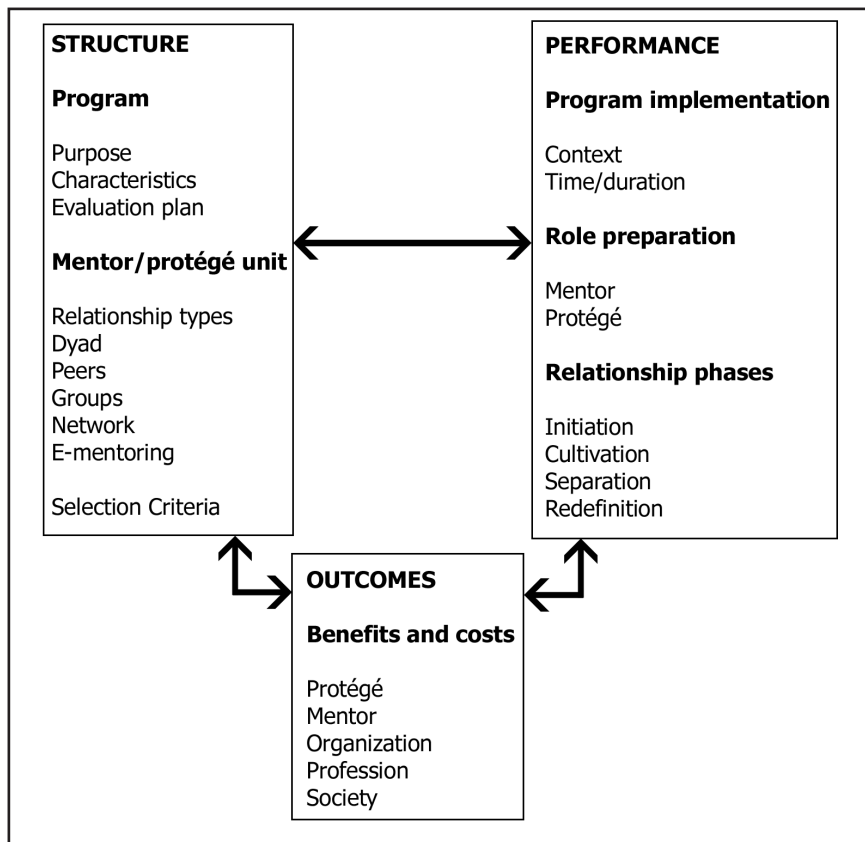


Figure 2. Conceptual framework for the study of mentoring in nursing.

given to formal or informal program, mentor type, choice, or assignment of mentor, mentor/protégé match, and ratio of mentor to protégés.

Formal mentoring programs are designed to accomplish specific goals, have a coordinator to oversee operations and evaluate progress, and is of a finite duration. Informal mentoring is spontaneous, based on need and interpersonal attraction, and continues as long as needs are being met.¹² When these criteria for informal or formal mentoring programs are applied to the 16 articles, all 16 programs are considered formal. Each program has specific goals, a coordinator, eligibility requirements for the mentor, expectations regarding the process, and evaluation criteria.

The type of mentor includes both who is in the position and how he or she relates with the protégé (eg, peer dyads, faculty-student groups, alumni network, and e-mentoring). Half the studies used clinical staff mentors in dyad mentor relationships,¹³⁻²⁰ peer mentors were used in 5 studies,²¹⁻²⁵ faculty mentors in 2 studies,^{26,27} and

alumni in 1.²⁸ The peer mentor was a senior or graduate student in 3 of the 4 studies, the remaining study did not indicate the collegiate level of the peer mentor.

Current research influenced mentor/protégé selection in only 1 study, where authors report that peer mentoring strategies were used to improve student's motivation, participation, self-confidence, communication, and responsibilities for learning.²⁵ Rationales for mentor selection is provided in 6 studies.^{13,16,23,26-28} The only apparent common theme was willingness on the part of the mentor to participate and his or her availability. Other rationales provided for mentor selection included ethnicity,¹³ faculty-espoused commitment to students,²⁸ familiarity with curriculum, and willing to be a role model.²⁷

Protégé participation varied from being a required component of their educational program to being optional. In 5 of the 16 studies, students were required to participate in the mentoring program because it was part of their clinical rotation and they

were paired with a staff nurse mentor to learn clinical nursing skills.^{14,17-20} Eligibility criteria for protégés were mentioned in 6 studies. Ethnicity or minority status was the only requirement in 2 programs.^{13,15} Students categorized as "at risk" or disadvantaged were participants in 2 programs.^{24,28} In 1 program the mentors and protégés were already peers in the program so selection was easier.²¹ Finally, students were required to enroll in a corresponding course to participate in the mentoring program.²⁷ The remaining 5 studies did not provide selection criteria.

Thus, only 1 study indicated that current research was used to select the mentor, assuming that everyone is suited to be a mentor or protégé. Factors such as competitiveness, insecurity, lack of confidence, poor self-esteem, and a reluctance to be assertive in asking for things for oneself may impede the development of mentoring relationships.²⁹ Random selection may also contribute to dysfunctional mentoring.³⁰

Mentors were assigned in 15 of the 16 articles. The program coordinator or program staff made the arrangements based upon predetermined criteria gathered from college application forms, interviews, formalized tests, and essays. Assuming common ethnic backgrounds would be beneficial in facilitating the relationship, 1 program focused on matching ethnicity when forming their dyads.²⁸ Consideration was also given to gender, life experiences, career interests, and geographical location.

The ratio of mentor to protégés varied from a low of 1:1 to a high of 1:10-15. Ten of the studies describe a ratio of 1:1. Five studies presented a wide range from 1:2 to 1:10-15. No ratio was offered in 1 article.²¹

Mentoring Processes and Dynamics

Process focuses on the dynamics of the mentoring relationship and includes mentor and protégé orientation and preparation, components of the program, and phase of the relationship, and frequency of contact.

Role preparation was addressed in 6 of the 16 studies. Descriptions are offered of the mentor orientation and

training sessions, and plans for ongoing individual and group meetings to identify concerns and receive support and suggestions. There is less consistency about protégé orientation; some training sessions were described (eg, time management, professional issues, and the expectation that protégés attend 2 meetings a semester on various self-development topics).

No preparation of mentor or protégé was described in 10 of the studies. Information was missing about the relationship of preparation and effectiveness of the program.

Details of program components and activities were missing in all 16 articles. Twelve studies provided no information regarding the actual program components. Mentor objectives were stated in only 2 studies. The mentor was to be a student supervisor, assessor, and facilitator of learning experiences.¹⁷ The mentor was to act as an academic tutor; assist with priority setting; identify academic, financial, and social resources; provide support and encouragement; and act as a role model.²⁸ These objectives are consistent with the 2 main functions of mentoring: psychosocial development and career success. Both of these functions are combined in a qualitative study focused on 5 key mentor activities: befriending, planning to meet needs, collaborating, coaching, and reflecting.¹⁸

In 5 studies mentoring was part of the clinical curriculum; the contact between mentor and protégé occurred when the participants worked the same tour of duty. The mentoring relationship was compromised when the mentor was ill or assigned to another unit due to staff shortages. Learning experiences available to protégés were decreased in the mentor's absence. When the staff mentor's workload was substantial, opportunities for clinical learning also were decreased.

Specified and required contact ranged from a high of weekly face-to-face meetings in 3 studies to telephone appointments as needed by protégés. The project director was involved through personal visits and/or written study group documentation forms. In 1 study a dinner midway through the program was arranged to allow faculty to interact with the participants. In another, the faculty men-

tors in 1 study met weekly with their small groups.²⁷ In 5 programs, no information was provided regarding the number of contact hours required. None of the programs provided data to support their choice of contact frequency requirements.

The final dimension included in the process of mentoring is the developmental phases of the mentoring relationship: initiation, cultivation, separation, and redefinition.³⁰ None of the studies considered the notion that the amount of time required will vary depending on maturation of the relationship; ie, beginning relationships require more frequent meetings compared to time required as relationships mature.

Mentoring Program Outcomes

Results of the 16 studies are synthesized within a benefit-cost framework according to stakeholder. Protégés said that they benefited in some way from participation in the program. Five studies provided information that the mentoring programs had increased both protégé retention and success rate on NCLEX. Several protégés reported an increased sense of socialization into the nursing profession, enhanced self-esteem, and decreased anxiety and stress.

Mentors said that participation in the program strengthened their leadership skills, enhanced their self-worth, and motivated them to help other students. They expressed satisfaction about sharing their knowledge and experience with protégés and were revitalized by protégé enthusiasm. The articles did not present benefits for such other stakeholders as mentors, nursing schools, nursing profession, or society.

Costs of mentoring programs varied depending on the type and duration of orientation, support strategies, and evaluation processes. Despite these costs, the mentoring programs reported here accomplished their goals. The protégés were satisfied with their participation and the attrition rates from the mentoring programs were small.

In summary, this section used the structure-process-outcome framework to integrate findings of the 16 studies on mentoring undergraduate nursing

students. As reflected in Figure 2, structure includes the mentor/protégé unit, program type, and contextual variables. Process includes program components, role preparation, and phases in the mentor/protégé relationship. Outcomes are presented for stakeholders within a benefit-cost perspective. The overall conclusion is that mentoring is positively related to student academic success and psychosocial development; mentoring students contributes to their retention and graduation.

State-of-the-Science Discussion

This discussion evolves from the 16 evidence-based references published over the past 12 years. The volume of research on mentoring is increasing, but there are few explicit connections among the research reviewed here, contributing to fragmentation of the field rather than consolidation. The state of the science of mentoring in nursing education is presented in relation to the conceptualization and theoretical links, methodical issues, and overall contextual factors.

Conceptualization

Scholars continue to refine the definition of mentoring in nursing since Vance's early work in the late 1970s.² Today, concept analysis techniques are applied to define key attributes of mentoring and explain how mentoring differs in terms of antecedents and outcomes from such other interpersonal behaviors as coaching, advising, and networking.⁵ Beyond nursing's disciplinary borders, scientists in education and business have added several conceptual dimensions in relation to formal and informal mentoring programs,³⁰ phases of the mentoring relationship,³¹ and dysfunctional aspects of the mentoring relationship.³² Despite the volume of creative work on conceptualization of mentoring in nursing, education, and business, nurse researchers have not yet applied this work in their research, nor has attention been given to the validity of the concept's various dimensions for professional nursing. Yet, construct clarity is required to develop theoretical propositions for testing.

Theoretical Perspectives

Theoretical frameworks were used in only 4 of the 16 studies examined in this article. Education theories were used in 3 studies: Bean and Metzner's model of nontraditional undergraduate student attrition,²² humanistic paradigm of adult learning,²⁶ and the model of student centered collaborative learning.²⁵ An emancipatory paradigm of feminist theory was used to examine mentoring within the context of feminine friendships.²¹ A theoretical perspective is necessary for research to extend knowledge. The absence of theoretical frameworks in nursing research is a limitation that could be overcome by extending the search of research literature to education, social sciences, and business literature, and consider such theoretical perspectives as transformational leadership and mentoring outcomes,³³ social identity theory and power,³⁴ and role theory and social exchange.³⁵ Nurses need to "borrow" theories from the social sciences to capture the complexities of the mentoring relationship and to lay the foundation for replication of nursing research.

Methodological Issues

Data-based articles on mentoring undergraduate nursing students are being published in journals targeted for application; however, there is need for more information about study designs, instrumentation, and findings. The cross-sectional design is nursing's predominant one in mentoring research, yet only an association among variables can be tested. Opportunities exist for more sophisticated experimental designs.³⁶ Longitudinal designs are needed to study the phases of mentoring relationships in nursing. Scant attention has been paid such contextual factors as organizational culture and reward systems, yet they are bound to influence the mentoring environment.

Most nursing data have been in the form of self-reports in questionnaires, surveys, and diaries. Mentoring is of sufficient import to nursing to justify investment in sophisticated instrument development and adequate testing for validity and reliability. Future research should include other

forms and sources of data; for example, pre- and posttests of knowledge and skills, institutional data to compare student successes, and contrast outcomes of face-to-face mentoring and virtual e-mentoring.

Contextual Issues

All 16 studies considered here were limited to 1 institution, yet the retention issue is global and justifies larger cross-institutional studies to increase consistency and develop a "science" of mentoring undergraduate students. Nursing is lagging behind other disciplines in conducting research on mentoring in education programs. Replication studies with larger samples and cross-disciplinary comparisons are necessary to extend the science of mentoring and student retention.

Recommendations

The nursing literature contains numerous references to mentoring but the state of the science is in its infancy. Nurse researchers need to clarify the meaning and significance of mentoring in nursing education. Priorities for future research include the following recommendations:

First, continue to refine the conceptualization of mentoring and examine the complexities of the mentorship relationship. The nature of the mentor-protégé relationship and their interactions needs to be examined beyond documenting frequency of contacts. A comparison of face-to-face contact versus e-mentoring is needed especially as higher education becomes increasingly Web-based.

Second, compare the effectiveness of an assigned mentor versus a chosen mentor. Do students fare better if the decision is removed or is the traditional method of establishing a mentoring relationship more effective?

Third, determine the circumstances under which each type of mentor is most appropriate and effective.

Lastly, assess outcomes of mentoring programs with varying durations. When should students enter the mentoring program, how long should they participate, and what follow-up is indicated to fully understand the outcomes?

Summary

This integrative review of 16 data-based articles assessed the state of the science in mentoring undergraduate nursing students and fostering graduation. Findings in all 16 studies support the notion that mentoring can impact student retention rate and satisfaction. The state of the science in mentoring is evolving; nurse educators can provide evidence-based education by implementing what is known about mentoring undergraduate nursing students, partnering with colleagues in similar nursing schools to compare and contrast outcomes, and disseminating their collective experiences.

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STATEMENT OF OWNERSHIP, MANAGEMENT, AND CIRCULATION (Act of August 12, 1970; Section 3685; Title 39 United States Code) Date of Filing—October 1, 2004. Title of Publication—*Nurse Educator*; Frequency of Issue—Bimonthly; Annual Subscription Price—\$ 89.00; Location of Known Office of Publication—Lippincott Williams & Wilkins, Inc., 16522 Hunters Green Parkway, Hagerstown, MD 21740-2116; Location of the Headquarters or General Business Offices of the Publisher—Lippincott Williams & Wilkins, Inc., 530 Walnut Street, Philadelphia, PA 19106; Publisher—Lippincott Williams & Wilkins, Inc., 530 Walnut Street, Philadelphia, PA 19106; Editor—Suzanne Smith, EdD, RN, FAAN, 3401 32nd Street West, Suite C-12, Bradenton, FL 34205-2748. Managing Editor—Randi Davis; Owner—Lippincott Williams & Wilkins, Inc., 530 Walnut Street, Philadelphia, PA 19106, 351 West Camden Street, Baltimore, MD 21201; Wolters Kluwer, US, 333 Seventh Avenue, New York, NY 10001; Wolters Kluwer nv (owns 100% of stock), Stadouderskade 1, 1054 FS Amsterdam, The Netherlands; Known Bond Holders, Mortgagees, and other security holders owning or holding 1 percent or more of the total amount of bonds, mortgages, or other securities—None. A. Total no. of copies printed (net press run), average 3,850, actual 3,800. B. Paid and/or requested circulation 1. Paid/requested outside-county mail subscriptions stated on form 3541, average 2,374, actual 2,321; 2. Paid in-county subscriptions, none; 3. Sales through dealers and carriers, street vendors, counter sales, and other non-USPS paid distribution, average 298, actual 311; 4. Other classes mailed through the USPS, none. C. Total paid and/or requested circulation [sum of B (1), (2), (3), and (4)], average 2,672, actual 2,632. D. Free distribution by mail (samples, complimentary, and other free). Outside-county as stated on form 3541, average 107, actual 255; 2. In-county as stated on form 3541, none; 3. Other classes mailed through the USPS, none. E. Free distribution outside the mail (carriers or other means), average 18, actual 41. F. Total free distribution (sum of D and E), average 125, actual 296. G. Total distribution (sum of C and F), average 2,797, actual 2,928. H. Copies not distributed, average 1,053, actual 872. I. Total (sum of G and H), average 3,850, actual 3,800. Percent paid and/or requested circulation, average 95.53%, actual 89.89%. I certify that the statements made by me above are correct and complete. *Jeffrey Brown, Manager, Periodicals Operations*.