
Borrowed Theories, Shared Theories, and the Advancement of Nursing Knowledge

Antonia M. Villarruel, RN; PhD; FAAN
Associate Professor, University of Michigan, Ann Arbor

Tammi L. Bishop, RN; MSN
Doctoral Student, University of Pennsylvania, Philadelphia

Edith M. Simpson, RN; PhD
University of Pennsylvania, Philadelphia

Loretta S. Jemmott, RN; PhD; FAAN
Associate Professor, University of Pennsylvania, Philadelphia

Jacqueline Fawcett, RN; PhD; FAAN
Professor, University of Massachusetts-Boston

Despite the continued use of borrowed theories in nursing, little attention has been given to determining whether theories developed in another discipline are empirically adequate descriptions, explanations, or predictions of nursing phenomena. In this article, we demonstrate how a borrowed theory can be placed within a nursing context by linking it with two different conceptual models of nursing. We present our plans for research focused on condom use behavior and discuss how results from these studies will be used to determine whether the borrowed theory can be considered a shared theory.

Nursing must continue to develop distinctive, if not unique, knowledge if it is to take its place as a legitimate professional discipline. Within the last 25 years, nurse theorists have made extensive contributions in defining the essence of nursing practice and in delineating the role nurses play in supporting the health and well-being of clients. Despite these contributions, even a cursory review of nursing textbooks and journals today reveals that nurses continue to borrow theories from other disciplines. But, theories from other disciplines may not be adequate to guide nursing research or practice. Unfortunately, little attention has been given to determining whether the borrowed theories are empirically adequate descriptions, explanations, or predictions of nursing phenomena. In other words, few nurse scientists have

determined whether theories from other disciplines can legitimately be considered shared theories and thus appropriate for use by nurses (Barnum, 1990).

In this article, we demonstrate how a theory developed by another discipline (borrowed theory) is placed within a nursing context (Cody, 1999). Given the current societal emphasis on health promotion and disease prevention, we selected the theory of planned behavior (TPB) (Ajzen, 1985, 1991) as the exemplar for borrowed theory. We show how the TPB is placed within a nursing context by linking it with two different conceptual models of nursing: Neuman's (1995) systems model (NSM) and Orem's (1995) self-care deficit theory of nursing (SCDTN). In addition, we discuss our plans for research focused on condom use behavior, an especially timely and salient example of nursing research that focuses on health promotion and disease prevention. We will

discuss how results from these studies will be used to determine whether the TPB is a shared theory.

Nursing and Health Promotion and Disease Prevention

Societal interest in health promotion and disease prevention is clearly documented in the strategic plans best known as Healthy People 2000 and Healthy People 2010 (U.S. Department of Health and Human Services, 1990, 1999). That interest was catalyzed by recognition of the extent to which death and disability can be averted by behavioral change. Escalating healthcare costs and increased consumer interests in maintaining health further support

Keywords: Neuman systems model, Orem, self-care deficit theory of nursing, theory of planned behavior, theory development

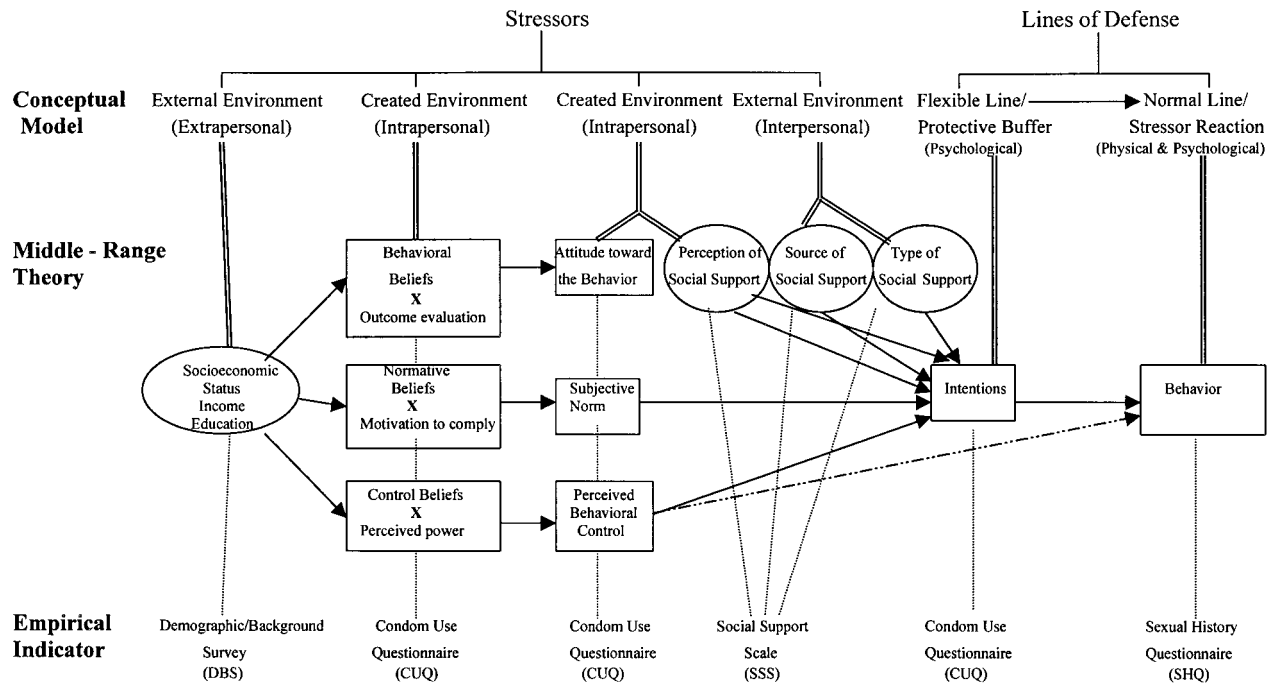


Figure 1. Proposed Conceptual-Theoretical-Empirical Structure for Condom Use Study: Neuman’s (1995) Systems Model and Theory of Planned Behavior

this emphasis on health promotion and disease prevention.

Nurses’ interest in health promotion and disease prevention dates from Nightingale. Since that time, nurses have used a variety of nursing models and theories to guide health promotion and disease prevention research and practice. For example the NSM (1995) has been used as a basis for designing and evaluating a health promotion program in a minority industry (Fowler & Risner, 1994) and for the testing of progressive muscle relaxation on stress among clerical workers (Vaughn, Cheatwood, Sirles, & Brown, 1989). The health promotion model (Pender, 1996) has been used extensively to examine exercise behaviors, alcohol use and misuse, and other health promoting behaviors (Garcia, Pender, Antonokas, & Ronis, 1998; Guthrie, Loveland-Cherry, Frey, & Dielman, 1994; Pasucci, 1992). The SCDTN also has been used extensively in health promotion research conducted with adolescents and other populations (Aish & Isenberg, 1996; Deatrck, Angst, & Madden, 1999; Dodd, 1997).

Members of other disciplines, most

notably social psychologists, also have focused attention on disease prevention. Social psychologists have developed various theories to explain the antecedents to behaviors that prevent disease. The TPB, which is an extension of the theory of reasoned action (TRA) (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975), is an example of such a theory. Several nurse researchers have used these theories. For example, Jemmott and Jemmott (1992) used the TRA as the basis to design and evaluate an HIV risk reduction intervention among African American women and subsequently used the TPB to examine condom use intentions among African American youth (Jemmott, Jemmott, & Hacker, 1992). Moreover, Young, Lierman, Powell-Cope, Kasprzyk, and Benoliel, (1991) used the TPB to study self-breast examination behavior.

Theory of Planned Behavior

The TPB posits that several variables explain behavior (see Figure 1). According to this theory, perceived behavioral control and intentions to perform a specific behavior are determinants of

the behavior. Depending on the behavior, the relative importance of intention and perceived behavioral control may vary. Perceived behavioral control becomes more important as volitional control over the behavior declines (Doll & Ajzen, 1992). Intentions, that the likelihood that an individual will perform a behavior, is determined by attitude toward the behavior, subjective norm, and perceived behavioral control. In other words, people intend to perform a behavior when they evaluate that behavior positively, when they perceive social pressure from important referents to perform the behavior, and when they perceive that performing the behavior is easy (Ajzen, 1985, 1991; Doll & Ajzen, 1992).

The TPB also defines components of attitudes, subjective norm, and perceived behavioral control. For example, attitude toward the behavior is seen as reflecting the beliefs that an individual has regarding performing the behavior in question (behavioral beliefs), and the positive or negative consequences associated with engaging in the behavior (outcome evaluations). Subjective norm represents beliefs regarding

whether significant referents approve or disapprove of the individual performing the behavior (normative beliefs), and the individual's willingness to do what he or she believes referents would want him or her to do (motivation to comply). Perceived behavioral control reflects the perception that a person has sufficient resources and skills to perform the behavior (control beliefs) and the confidence that he or she can adequately perform the behavior (perceived power) (Ajzen, 1985, 1991).

Considering the behavior of condom use as an example, a person's intention to use condoms is the immediate antecedent to performing the behavior. Intention to use condoms is influenced by the perceived ease or difficulty in using condoms (perceived behavioral control) without, for example, ruining the mood or decreasing sexual pleasure. Other influences on intentions to use condoms include the person's favorable or unfavorable evaluation toward using condoms (attitude toward the behavior) and the perceived social pressure from important referents to use or not use a condom (Ajzen, 1985, 1991). An example of a favorable evaluation is the belief that condoms can prevent HIV and sexually transmitted diseases. On the other hand, the perceived social pressure from an important referent, such as a sexual partner, to not use condoms would influence an individual to not perform the behavior.

Conceptual Models of Nursing and the Theory of Planned Behavior

Despite the use of the TPB by nurses, there has been no systematic evaluation of the TPB to examine its appropriateness for nursing. The TPB can be placed within a nursing context only if it is linked with a nursing frame of reference, that is, a conceptual model of nursing. Failure to explicate such a linkage represents a missed opportunity to determine whether the TPB can be considered a theory shared with nursing, and is a missed opportunity to advance nursing knowledge. Furthermore, failure to explicate such linkages prevents

the expansion of the TPB from an explanation of the antecedents of behavioral actions to a prediction of the effects of nursing interventions on behavioral actions that are directed toward health promotion and disease prevention. It is nursing conceptual models that identify the interventions that nurses use to effect positive changes in individuals' health (Donaldson & Crowley, 1978; Fawcett, 1995). Such interventions obviously are not part of the TPB or any theory borrowed from another discipline.

The linkage of a nursing conceptual model and a borrowed theory must first take into consideration the logical congruence of worldviews that undergird the conceptual model and the theory. Examination of the TPB reveals that it reflects the reciprocal interaction worldview (Fawcett, 1993). Thus, the search for a conceptual model to which this borrowed theory can be logically linked had to be confined to those that also reflect the reciprocal interaction world view. That search yielded two particularly appropriate nursing conceptual models: the NSM and SCDTN.

Neuman's Systems Model and TPB

Within the NSM, the client is viewed as an open system interacting with the environment (Neuman, 1995). The client system is composed of five interacting variables: physiological, psychological, sociocultural, developmental, and spiritual. The client system central core contains basic survival factors such as the variables contained within, innate or genetic features, and strengths and weaknesses of the system parts.

Surrounding the central core are three concentric rings that serve to protect this basic structure: flexible line of defense, normal line of defense, and lines of resistance. The flexible line of defense, the outermost ring, prevents the penetration of stressors into the client system. The normal line of defense follows inward and represents the client's usual state of wellness or usual behavior. The lines of resistance, the innermost concentric circle, are involuntarily activated when a stressor

triggers the normal line of defense. The lines of resistance contain specific factors that support the central core and normal line of defense that protects system integrity. If these protective lines become ineffective, death may result.

Neuman (1989, 1995) defines the environment as all factors or influences both internal and external to the client. The internal environment consists of all forces or influences contained within the client. The internal environment is the source of all intrapersonal stressors. The external environment consists of all external influences and is the source of interpersonal and extrapersonal stressors. The created environment encompasses both the internal and external environments. The main goal of nursing is to promote optimal wellness of the client by retaining (primary prevention), attaining (secondary prevention), or maintaining the stability (tertiary prevention) of the client system. In HIV prevention, retaining an HIV seronegative status, which could be accomplished through consistent and correct condom use, would represent optimal wellness.

Although the NSM has been used extensively by nurse researchers, only a few nurse researchers (Hanson, 1995; Jennings, 1997) have integrated its use with the TPB. As depicted in Figure 1, the person's usual behavior represents the normal line of defense. Influencing factors or stressors that may have an impact on a male using a condom are his beliefs. Belief-based measures evolve from the created environment and, therefore, are considered intrapersonal stressors. Intrapersonal stressors that evolve from the created environment are attitudes, subjective norm, and perceived behavioral control. Just as the created environment can be based on an individual's beliefs (Neuman, 1989), so can an individual's attitudes, subjective norm, and perceived behavioral control (Ajzen, 1985, 1991). Intentions represent the flexible line of defense that serves as a protective buffer to prevent the penetration of stressors to the normal line of defense. The flexible line of defense (intentions) can either allow or

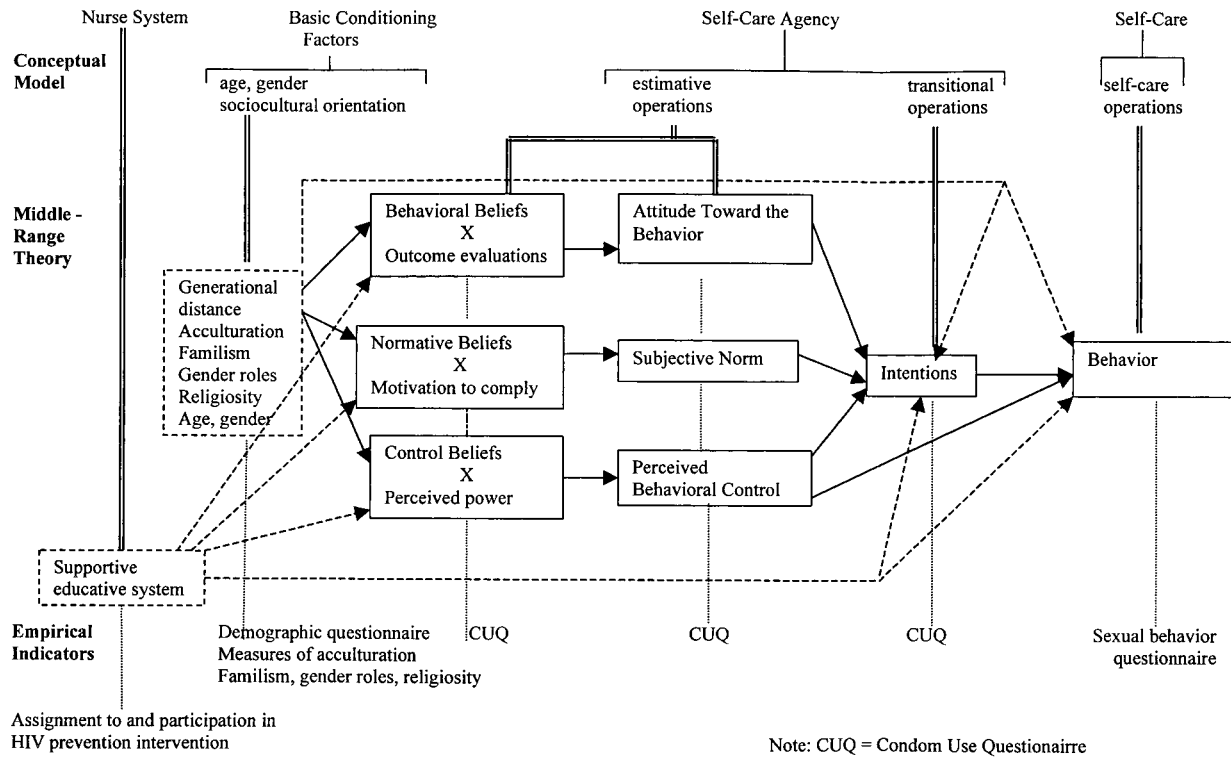


Figure 2. Proposed Conceptual-Theoretical-Empirical Structure for Condom Use Study: Orem’s (1995) Self-Care Deficit Nursing Theory and Theory of Planned Behavior
 NOTE: CUQ = Condom Use Questionnaire.

prevent a stressor (condom use) from penetrating, just as a client can either intend or not intend to use a condom. If the flexible line of defense prevents the penetration of a stressor, the normal line of defense will be protected and the client’s wellness state or HIV seronegative status will be retained. On the contrary, if the flexible line of defense fails to protect the normal line, the wellness state would be disrupted and the client may become infected with HIV. Therefore, primary interventions aimed at HIV risk reduction can be developed based on those variables that are found to influence condom use behaviors.

Self-Care Deficit Theory of Nursing and TPB

Orem (1995) maintains that humans possess capabilities for deliberate action, or self-care agency. Self-care agency is composed of a hierarchical set of abilities that include abilities foundational to doing any deliberate action, enabling capabilities for self-care (power components), and capabilities for

self-care operations (estimative, transitional, and productive operations). Persons engage in deliberate action that is composed of both internally and externally oriented behaviors directed toward self or the environment (self-care) in order to meet continuing needs for self-care that are essential for health and well-being (self-care requisites). Furthermore, Orem maintains that external forces, known as basic conditioning factors, can modify self-care agency, self-care, and self-care requisites. Examples of basic conditioning factors include age, gender, and sociocultural factors.

The goal of nursing is to assist persons to meet required needs for care. Nurses do this by developing systems of care (nursing systems) that are designed according to persons’ ability to care for themselves. For example, the supportive-educative nursing system is developed when clients are able to engage in self-care to meet their current self-care requisites, but require some guidance or teaching in learning new skills, adapt-

ing to changes brought on by development, or those associated with an illness condition (Orem, 1995). Within these nursing systems, nurses utilize a number of methods of helping (such as acting or doing for, guiding and directing, providing physical or psychological support, and creating an environment to support personal development) and teaching.

As presented in Figure 2, attitudes, subjective norm, perceived behavioral control (Ajzen, 1985, 1991), and intentions to perform a specific behavior are components of self-care agency. Specifically, attitudes, subjective norms, and perceived behavioral control are consistent with Orem’s (1995) conceptualization of estimative operations for self-care. Estimative operations include knowledge of self and the environment, understanding of the meaning of conditions related to self-care actions, as well as experiential and technical knowledge related to self-care. Intentions to use condoms are consistent with transitional type operations for self-care,

which according to Orem includes deciding what to do with respect to self-care. Condom use represents the self-care action. The goal resulting from consistent condom use is congruent with the self-care requisite of protection from hazard. Meeting this requisite specifically can lead to the prevention of illness.

Conceptual Models of Nursing, the Theory of Planned Behavior, and Nursing Research

Two studies concerned with condom use have been designed, one using the TPB and the NSM and the other using the TPB and Orem's SCDTN. Both studies, derived through literature review and clinical practice and, guided by the respective nursing conceptual models, propose extensions to the TPB.

First, a proposed study concerned with predicting condom use among socioeconomically diverse African American women is depicted in Figure 1 (Simpson, 1999). Although condom use is a male behavior, it is a goal that may be accomplished by women negotiating condom use with their partner (Chan & Fishbein, 1993). The constructs of socioeconomic status (income and education) and social support (source, type, and perception of the helpfulness of the support provided) are external to the TPB. Socioeconomic status evolves from the external environment as an extrapersonal stressor and may influence an individual's belief. The perception of the helpfulness of social support stems from the created environment and is intrapersonal in nature. The source and type of social support are both interpersonal stressors, which arise from the external environment. Both the source and type of social support, along with the perception of the helpfulness of the support provided, might each have a direct effect on intentions. In the proposed extension of the TPB, the empirical indicators to measure socioeconomic status concepts, concepts from the TPB included in the Condom Use Questionnaire, and behavior-specific social support from the Social

Support Scale will be developed from initial elicitation research (Simpson, 1999). Second, a study in process designed to test the effectiveness of an HIV prevention intervention with Latino youth (Villarruel, Jemmott, & Jemmott, 1999) is presented in Figure 2. Given the presumed influence of Latino cultural factors on condom use (e.g., acculturation, generational distance, gender role attitudes, familism, and religiosity), these concepts and empirical indicators were added. These are conceptualized as basic conditioning factors and, as such, are seen as influencing self-care agency and self-care. Furthermore, the intervention developed to promote condom use, conceptualized as a supportive-educative nursing system, is designed to enhance adolescents' self-care agency and to increase self-care or, in this instance, condom use.

Both basic conditioning factors and the proposed intervention are viewed as elements external to the TPB. Within the TPB, external variables are proposed to influence intentions and behavior indirectly through their influence on attitudes, subjective norms, and perceived behavioral control. However, within the SCDTN, basic conditioning factors and nursing systems are postulated to have a direct influence on self-care agency and self-care. Therefore, these relationships also will be examined in the proposed analysis.

Results from both studies will be used to test the relationships proposed by the TPB and those proposed by the respective nursing conceptual models. If the relationships proposed by the TPB were consistent with study findings, this would provide evidence that the TPB can indeed be considered a shared theory. Lack of support for the relationships proposed by the TPB should lead to further examination and consideration as to whether the TPB is adequate for nursing situations.

Conclusion

Nurses should not blindly adopt theories borrowed from other disciplines. Instead, systematic evaluation of the ap-

propriateness of borrowed theories for nursing situations should be considered. The linkage of the NSM and SCDTN with the TPB to investigate condom use behavior is similar to Ulbrich's (1999) triangulation theory development strategy. In this effort, a nursing conceptual model (Orem's SCDTN) was linked with a supporting theory (the transtheoretical model) and a population at risk (persons at risk for cardiovascular disease). Ulbrich did not, however, discuss the implications of the strategy for the development of shared nursing theory, which is the major focus of the strategy presented in this article.

From a conceptual basis, there seems to be congruence between the TPB and two distinct conceptual models of nursing. Important first steps in determining the empirical adequacy of the TPB for situations in which nurses practice include examining the logical congruence of worldviews between the conceptual model and the TPB and subsequently developing the conceptual-theoretical-empirical structure.

Results from the proposed theory testing studies also will be useful in examining the credibility of the conceptual models. These processes serve as a blueprint from which the applicability of the TPB to nursing situations can be examined. Although the TPB has been an extremely useful theory in predicting a number of health-related behaviors, the use of nursing conceptual models provides a contribution in examining the utility of the TPB in nursing. In both research examples, the nursing conceptual models and clinical nursing practice guided extensions to the TPB. Proposed extensions to the TPB also will be tested. Thus study findings will be useful efforts from nursing in advancing the TPB.

As nurses continue their historical mission of promoting health and preventing disease, it is critical that nursing practice is based on a nursing conceptual model that is linked with unique nursing theories. Theories that are shared with, not just blindly borrowed from, other disciplines should also be used. Nurse researchers and clinicians

can and should utilize innovations from other disciplines. Indeed no one discipline can claim health or health promotion as its sole domain. Nurses must be confident that their practice is based on theories that are appropriate for nursing situations. Nurses should be able to articulate to their interdisciplinary colleagues and to the public how what we do is consistent with theories and research from our professional discipline. Thus, nurse researchers must examine the extent to which theories borrowed from other disciplines are empirically adequate in nursing situations. Nurse researchers must continue their commitment to the advancement of nursing knowledge. Only then can nursing be assured its continued development as a legitimate professional discipline.

References

- Aish, A. E., & Isenberg, M. (1996). Effects of Orem-based nursing intervention on nutritional self-care of myocardial infarction patients. *International Journal of Nursing Studies, 11*, 259-270.
- Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhland & J. Beckman (Eds.), *Action-control: From cognitions to behavior* (pp. 11-39). Heidelberg, Germany: Springer.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*, 179-211.
- Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice Hall.
- Barnum, B.J.S. (1990). *Nursing theory: Analysis, application, evaluation* (3rd ed.). Blenview, IL: Scott, Foresman/Little Brown Higher Education.
- Chan, D. K-S., & Fishbein, M. (1993). Determinants of college women's intentions to tell their partners to use condoms. *Journal of Applied Social Psychology, 23*, 1455-1470.
- Cody, W. K. (1999). Middle-range theories: Do they foster the development of nursing science? *Nursing Science Quarterly, 12*, 9-14.
- Deatrick, J., Angst, D., & Madden, M. (1999). Promoting self-care with adolescents. *Journal of Child and Family Nursing, 1*, 65-76.
- Dodd, M. J. (1997). Self-care: Ready or not! *Oncology Nursing Forum, 24*, 983-990.
- Doll, J., & Ajzen, I. (1992). Accessibility and stability of predictors in the theory of planned behavior. *Journal of Personality and Social Psychology, 63*, 754-765.
- Donaldson, S. K., & Crowley, D. M. (1978). The discipline of nursing. *Nursing Outlook, 26*, 113-120.
- Fawcett, J. (1993). *Analysis and evaluation of nursing theories*. Philadelphia: F. A. Davis.
- Fawcett, J. (1995). *Analysis and evaluation of conceptual models of nursing*. Philadelphia: F. A. Davis.
- Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior*. Boston: Addison-Wesley.
- Fowler, B. A., & Risner, P. B. (1994). A health promotion program evaluation in a minority industry. *Association of Black Nursing Faculty Journal, 5*(3), 72-76.
- Garcia, A. W., Pender, N. J., Antonokas, C. L., & Ronis, D. L. (1998). Changes in physical activity beliefs and behaviors of boys and girls across the transition to junior high school. *Journal of Adolescent Health, 22*, 394-402.
- Guthrie, B. J., Loveland-Cherry, C., Frey, M. A., & Dielman, T. E. (1994). A theoretical approach to studying health behaviors in adolescents: An at risk population. *Family and Community Health, 17*, 35-48.
- Hanson, M. J. (1995). *Beliefs, attitudes, subjective norms, perceived behavioral control, and cigarette smoking in White, African-American, and Puerto Rican-American teenage women*. Unpublished doctoral dissertation, University of Pennsylvania, Philadelphia.
- Jemmott, J. B. III, Jemmott, L. S., & Hacker, C. I. (1992). Predicting intentions to use condoms among African American adolescents: The theory of planned behavior as a model of HIV risk associated behavior. *Journal of Ethnicity and Disease, 2*, 371-380.
- Jemmott, L. S., & Jemmott, J. B. III. (1992). Increasing condom use intentions among sexually active inner-city Black adolescent women: Effects of an AIDS prevention program. *Nursing Research, 41*, 273-279.
- Jennings, K. M. (1997). *Predicting intention to obtain a pap smear among African American and Latina woman*. Unpublished doctoral dissertation, University of Pennsylvania, Philadelphia.
- Neuman, B. (1989). *The Neuman Systems Model: Application to nursing education and practice* (2nd. ed.). Norwalk, CT: Appleton & Lange.
- Neuman, B. (1995). *The Neuman systems model* (3rd ed.). Norwalk, CT: Appleton & Lange.
- Orem, D. E. (1995). *Nursing: Concepts of practice* (5th ed.). Philadelphia: Mosby.
- Pasucci, M. A. (1992). Measuring incentives to health promotion in older adults: Understanding neglected health promotion in older adults. *Journal of Gerontological Nursing, 18*(3), 16-23.
- Pender, N. J. (1996). *Health promotion in nursing practice* (3rd ed.). Stamford, CT: Appleton & Lange.
- Simpson, E. M. (1999). *Contributions of the Neuman systems model, theory of planned behavior, and social support to condom use among Black women*. Unpublished manuscript.
- Ulbrich, S. L. (1999). Nursing practice theory of exercise as self-care. *Image: Journal of Nursing Scholarship, 31*, 65-70.
- U.S. Department of Health and Human Services. (1990). *Healthy people 2000: National health promotion and disease prevention objectives for the year 2000*. Washington, DC: U.S. Government Printing Office.
- U.S. Department of Health and Human Services. (1999). *Healthy people 2010*. Retrieved from the World Wide Web August 1, 1999: <http://web.health.gov/healthypeople/>
- Vaughn, M., Cheatwood, S., Sirles, A. T., & Brown, K. C. (1989). The effect of progressive muscle relaxation on stress among clerical workers. *American Association of Occupational Health Nurses Journal, 37*, 302-306.
- Villarruel, A. M., Jemmott, L. S., & Jemmott J. B. III (1999). *Reducing HIV risk among Latino youth*. National Institute of Nursing Research, Grant 1 R01 NR 04855-01A1.
- Young, H. M., Lierman, L., Powell-Cope, G., Kasprzyk, D., & Benoliel, J. Q. (1991). Operationalizing the theory of planned behavior. *Research in Nursing & Health, 14*, 137-144.