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The Development of a Faith Community Nursing Intervention to Promote Health across the Life Span

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PURPOSE

The purpose of this article is two-fold: to report findings of a meta-analysis study and to describe the development of a faith community nursing intervention based on the study results. The meta-analysis study involved the merging and analyzing of data collected from previous studies that investigated the relationships among self-care agency, self-care self-efficacy, and health-promoting self-care behaviors in older adult, adult, and adolescent populations (Callaghan, 2003, 2005, 2006). This integration of data was performed to identify the relationships among these concepts which could support their use as a conceptual/theoretical framework to guide the development of a faith community nursing intervention to promote health across the life span. The statistical analysis used in this meta-analysis study was a canonical correlation in which the results were interpreted using a method that was different from the method used in the previous studies (Callaghan, 2003, 2005, 2006).

DEFINITIONS OF CONCEPTS

The theoretical frameworks used to guide this meta-analysis study as well as Callaghan's previous studies (2003, 2005, 2006) included Orem's Self-Care Deficit Theory (2001), Bandura's Self-Efficacy Theory (1997), and Pender's Health Promotion Model (2010). Orem's theory was used to articulate the concept of self-care agency, which is defined as the human ability to engage in self-care that can be affected by basic conditioning factors such as age, developmental state, life experiences, sociocultural orientation, health state, and available resources. Bandura's theory was used to articulate the concept of self-care self-efficacy, which is defined as the belief in abilities to successfully perform healthy behaviors required to attain good health. Pender's model was used to articulate the concept of health-promoting self-care behaviors, which are one's expressions of health and include spiritual growth, stress management, nutrition, physical activity, interpersonal relations, and health responsibility.

THEORETICAL FRAMEWORKS

The concept of self-care agency was derived from Orem's Self-Care Deficit Theory (2001) which consists of three interrelated theories: Theory of self-care; theory of self-care deficit; and theory of nursing systems. The theory of self-care focuses on a person's learned ability to act on one's own behalf to care for self. The theory of self-care deficit focuses on one's ability or self-care agency to meet self-care requisites. If a person does not have an adequate self-care agency to meet these requisites, the person will have a self-care deficit. The theory of

nursing systems includes three levels of nursing interventions: wholly compensatory; partially compensatory; and supportive-educative. The nurse provides care within the appropriate nursing system as needed to assist the person with self-care deficits. Using this theory in practice, a nurse would value self-care as a human behavior, identify components of one's self-care agency, identify when one has a self-care deficit, and intervene with the appropriate nursing system. It is the supportive-educative nursing system that would be used by the nurse who is focusing on promoting one's health (Orem, 2001).

The concept of health-promoting self-care behaviors was derived from Pender's Health Promotion Model (2010) which includes three major components identifying the multidimensional nature of persons interacting with the environment during the pursuit of health. The first component involves individual characteristics and experiences including prior related behavior, and biological, psychological, and sociocultural personal factors. The second component involves behavior-specific cognitions and affect including perceived benefits of action, perceived barriers to action, perceived self-efficacy, activity-related affect, interpersonal influences, and situational influences. The third component involves behavioral outcomes including immediate competing demands and preferences, commitment to a plan of action, and health-promoting behavior. Health-promoting behaviors are the outcomes measured when developing and implementing health promotion interventions (Pender et al., 2010).

The concept of self-care self-efficacy was derived from Bandura's Theory of Self-Efficacy (1997). This theory is a component of Bandura's Social Cognitive Theory. The development of one's beliefs of self-efficacy is influenced by cognitive appraisal of information obtained from four major sources. The first information source is enactive mastery experience. Successful attempts at behavior performances will tend to increase one's self-efficacy of the particular behavior. The second information source is vicarious experience. Observing others modeling a behavior successfully will increase one's self-efficacy of the behavior. The third information source is verbal persuasion. Verbal persuasion from others that is positive in nature will increase one's self-efficacy of the particular behavior. The fourth information source is physiological and affective states. Self-efficacy beliefs can be lowered by physiological states such as high stress levels as well as in negative affect states such as anxiety. Self-efficacy of healthy behaviors can be increased by incorporating these four sources of information in health promotion activities (Bandura, 1997).

REVIEW OF THE CURRENT LITERATURE

A review of the current nursing literature supports the fact that the practice of faith community nursing has been evolving over the past 30 years. The recent

literature focusing on this specialty practice provides evidence of the important work that faith community nurses are doing within and beyond the walls of their faith communities. Pappas-Rogich and King (2014) reported that the faith community nursing model of community-based practice supports the implementation of the Healthy People 2020 objectives. Lashley (2013) reported that faith community nurses are in an ideal role to promote research and evidence-based practice in faith community settings. However, Dandridge (2014) reported that faith community nurses are providing a variety of interventions but many are not measuring or documenting outcomes of these interventions. This reported meta-analysis study established the theoretical groundwork for the development of an intervention that addresses Healthy People 2020 objectives, research and evidence-based practice within a faith community setting, and measurement and documentation of intervention outcomes.

METHODOLOGY

A correlational multivariate design was used in this meta-analysis study to investigate the extent that self-care agency and self-care self-efficacy explain health-promoting self-care behaviors across the life span. The hypothesis for this study was that there will be a significant relationship between the canonical variate sets: set one variables include the four subscales of the measure of self-care agency and the four subscales of the measure of self-care self-efficacy; set two variables include the six subscales of the measure of health-promoting self-care behaviors. A power analysis was performed for each of the previous studies using the following criteria: alpha = .05, beta = .20, and power = .80. The sample size for each of the studies was adequate and resulted in a power of at least .80 (Callaghan, 2003, 2005, 2006).

SAMPLE

The sample for this meta-analysis study included volunteer, convenience samples of adolescents, adults, and older adults whose ages ranged from 14 to 98, the average age being 39. The participants were recruited from a variety of environments including schools, hospitals, and community settings. Subjects were invited to participate in the studies using the following inclusion criteria: had the abilities to care for self and were English-speaking. The total sample size was 870 with the following characteristics: white (82%), female (71%), employed (55%), had an adequate income (76%), had health insurance (89%), and routinely practiced religion (65%). More demographic information for the individual groups can be found in Callaghan's previous studies (2003, 2005, 2006).

INSTRUMENTATION

IRB and site approvals were obtained prior to the collection of data for the previous studies (Callaghan, 2003, 2005, 2006). Four instruments were distributed by the researcher to the participants during scheduled meetings or classes. The researcher explained the study to the potential volunteers prior to distributing the instruments. Letters of explanation of the study were given to the adult and older adult volunteers. Adolescent volunteers were given assent/consent forms by the class teachers to have completed prior to the scheduled class meeting with the researcher. Most participants completed the instruments in 30 minutes. No names were required on the instruments to maintain anonymity and confidentiality. These instruments included the Exercise of Self-Care Agency (ESCA), Self-Rated Abilities for Health Practices (SRAHP), Health-Promoting Lifestyle Profile II (HPLPII), and a demographic instrument.

The ESCA scale (Kearney & Fleischer, 1979) was used to measure the variable Self-Care Agency. The items assess characteristics of self-care agency behaviors and factor into the four subscales of self-concept, initiative and self-responsibility, knowledge and information-seeking, and passivity (Riesch & Hauck, 1988). The instrument contains 43 five point Likert-type items with responses ranging from to "Very uncharacteristic" (0) to "Very characteristic" (4). Riesch and Hauck (1988) reported construct validity of the ESCA was strengthened with the deletion of eight items. These eight items were not scored for this study. Adequate internal consistency reliabilities were reported in Callaghan's (2003, 2005, 2006) previous studies and for this meta-analysis study ranged from .67 to .88. The only subscale to obtain an alpha below .70 was the subscale of passivity (.67), which included six negatively worded items that required reverse scoring. These were the only negatively worded items out of the total 115 items on the instruments, which may account for the lower alpha level.

The SRAHP scale (Becker, Stuifbergen, Soo Oh, & Hall, 1993) was used to measure Self-Care Self-Efficacy. The items assess the level of self-efficacy of performing health promotion behaviors and factor into the four subscales of exercise, psychological well-being, nutrition, and health practices. The instrument contains 28 five point Likert-type items with responses ranging from (0) "Not at all" to (4) "Completely". Construct validity and adequate internal consistency reliabilities were reported in Callaghan's (2003, 2005, 2006) previous studies and for this meta-analysis study ranged from .83 to .93.

The HPLPII scale (Walker, Sechrist, & Pender, 1987) was used to measure Health-Promoting Self-Care Behaviors. The items assess the frequency of performance of health-promoting behaviors which factor into the subscales of spiritual growth, stress management, nutrition, physical activity, interpersonal relations, and health responsibility. The instrument contains 52 four point Likert-

type items with responses ranging from (1) "Never" to (4) "Routinely". Construct validity and adequate internal consistency reliabilities were reported in Callaghan's (2003, 2005, 2006) previous studies and for this meta-analysis study ranged from .72 to .93.

A demographic instrument was developed by the researcher which assessed selected basic conditioning factors of self-care agency such as age, gender, race, employment, income, health insurance, and religion. More information on this instrument for the individual groups can be found in Callaghan's previous studies (2003, 2005, 2006).

DATA ANALYSIS

The statistics for this meta-analysis study were performed using SPSS 20.0 which included checks of data integrity (Bannon, 2013). Statistical power was at least .80 for this study. The assumptions related to normal distribution, multicollinearity, homoscedasticity, linearity, and outlier scores were met. Descriptive statistics for the scales used in this study are presented in Table 1.

Table 1
Descriptive Statistics (N = 870)

Scale/Subscales	Mean(SD)	Min-Max	Range(Midpt)
HPLPII - Total	136.36(21.95)	71-197	2-208(130)
Health Responsibility	22.99(5.67)	9-36	9-36(22.5)
Physical Activity	18.08(5.66)	8-32	8-32(20)
Nutrition	22.63(5.08)	9-36	9-36(22.5)
Spiritual Growth	27.33(4.90)	9-36	9-36(22.5)
Interpersonal Relations	27.33(4.84)	9-36	9-36(22.5)
Stress Management	19.99(4.23)	8-32	8-32(20)
SRAHP - Total	78.35(19.41)	17-112	1-112(56)
Nutrition	19.77(5.77)	1-28	0-28(14)
Psychological Well-being	19.38(5.36)	0-28	0-28(14)
Exercise	17.52(7.89)	0-28	0-28(14)
Responsible Health Practices	21.69(5.19)	0-28	0-28(14)
ESCA - Total	98.21(18.67)	20-140	0-140(70)
Self-Concept	38.47(6.73)	4-48	0-48(24)
Initiative & Responsibility	33.37(7.11)	4-48	0-48(24)
Knowledge & Info-Seeking	14.36(4.12)	0-20	0-20(10)
Passivity	12.65(4.80)	0-24	0-24(12)

A canonical correlation statistic was calculated to test the hypothesis in this meta-analysis study. This statistic explores the relationships between two multivariate sets of variables. In this study the predictor set of variables (set 1) included the four subscales of the ESCA scale: self-concept, initiative and responsibility, knowledge and information seeking, passivity and the four subscales of the SRAHP scale: nutrition, psychological well-being, exercise, responsible health practices. The criterion set of variables (set 2) in this study included the six subscales of the HPLPII scale: spiritual growth, stress management, nutrition, physical activity, interpersonal relations, and health responsibility.

Table 2 presents the canonical correlation analysis summary table, which identifies the variables in sets 1 and 2 and the canonical variates generated by the statistic. The loadings, canonical correlations, significance levels, variance explained, and redundancy measures are also identified for each canonical variate. The correlation matrix for set 1, set 2, and between sets 1 and 2 evidenced positive Pearson Correlations ranging from .11 to .66, .28 to .69, and .13 to .67 respectively.

The canonical correlation statistic generated six statistically significant canonical variates but only the first variate was theoretically interpretable by this researcher. This first canonical variate had a canonical correlation of .81 ($p < .001$) accounting for 65% of the variance explained. The interpretation of the structure coefficients or canonical loadings using the accepted cutoff correlation of .30 identified that all variables in set 1 and all variables in set 2 loaded on the first canonical variate. Since all of these variables loaded negatively, the reverse interpretation is true as well: Participants reporting high scores on all of the ESCA and SRAHP subscales also reported high scores on all of the HPLPII subscales. Redundancy measures indicate the variance of one set of variables predicated from the linear combination of the other set of variables which is similar to interpreting a multiple R squared. The redundancies for canonical variate 1 were .51 for the first set and .52 for the second set.

Table 2
Canonical Correlation Summary Table (N = 870)

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Loadings for Canonical Variates

Variable Sets	1	2	3	4	5	6

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SET 1

ESCA

	1	2	3	4	5	6
Self-Concept	-.82*	.16	-.23	.13	.41*	.24
Initiative/Responsibility	-.87*	-.05	.10	-.21	-.24	.31*
Knowledge/Info-Seeking	-.72*	.11	.35*	.40*	.19	.03
Passivity	-.35*	-.25	.00	-.16	-.01	.31*

SRAHP

	1	2	3	4	5	6
Nutrition	-.68*	.13	.41*	-.36*	.26	-.36*
Psychological Well-Being	-.79*	.22	-.37*	-.01	-.13	-.42*
Exercise	-.60*	-.68*	.04	.03	-.00	-.35*
Responsible Health Practices	-.75*	.29	.22	.25	-.13	-.18

Redundancy	.51	.09	.07	.06	.04	.09

SET 2

HPLPII

	1	2	3	4	5	6
Health Responsibility	-.77*	.24	.47*	.27	-.22	.08
Physical Activity	-.55*	-.82*	.10	.11	.02	-.12
Nutrition	-.73*	-.01	.38*	-.54*	.18	-.09
Spiritual Growth	-.84*	.03	-.39*	.14	.24	.27
Interpersonal Relations	-.74*	.12	-.27	.31*	.20	-.47*
Stress Management	-.69*	-.07	-.34*	-.31*	-.56*	-.04

Redundancy	.52	.13	.12	.10	.08	.05
Canonical Correlation	.81	.72	.54	.43	.29	.12
Variance Explained	65%	52%	29%	18%	8%	1%

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*Cutoff for interpretation = .30

DISCUSSION OF RESULTS

The findings of this canonical correlation analysis were interpreted using a method that was different from Callaghan's (2003, 2005, 2006) previous studies. The weights, sometimes called canonical or function coefficients, were interpreted in those studies. A researcher will interpret weights when the unique contribution of variables to a canonical variate is the goal. In each of these previous studies, interpretation of the weights from the canonical correlation identified one's spiritual growth and initiative and responsibility for self-care as the variables uniquely contributing to the first significant canonical variate. These canonical correlation results can be found in Callaghan's previous studies (2003, 2005, 2006). The canonical correlation results in this meta-analysis study were interpreted using the loadings, sometimes called structure coefficients or canonical loadings. A researcher will interpret loadings when the overall correlation of the variables with a canonical variate is the goal.

Levine (1977) suggests that because of the effect of multicollinearity on the canonical correlation, one should only interpret the structure coefficients. However, Thompson (1984) suggests one must make interpretation decisions reflecting the purpose of the study. The decision to interpret the canonical loadings instead of the canonical weights in this study reflects the purpose, which was to explore the relationships among the study variables in order use these concepts and their underlying models/theories in the development of a faith community nursing intervention that promotes health across the life span. The canonical correlation results confirmed that self-care agency and self-care self-efficacy did explain 65% of the variance in health-promoting self-care behaviors in a sample whose ages ranged across the life span. There was at least one significant relationship among the two sets of variables. All fourteen of the study variables loaded on the first significant canonical correlation, which supports the integration of the concepts in the development of a health promotion across the life span intervention.

The result of this meta-analysis study has significance for nursing practice since it provides direction for the development of health promotion activities. Limitations of this study include the heterogeneous demographics of the samples, which limits the generalizability of the findings. Also the reliability of the passivity subscale of the Exercise of Self-Care Agency Scale was .67, which is slightly below the recommended level of at least .70. A recommendation based on the result of this meta-analysis study is the development of health promotion interventions based on the integration of the study's concepts/theories. A description of the development of a faith community nursing intervention program based on the findings of this study is presented.

THE HEALTH PROMOTION INTERVENTION PROGRAM

Pender et al. (2010) suggested that the development and testing of interventions based on the logical integration of multiple theories should be a focus of behavior change and lifestyle modification research. This meta-analysis study provides the evidence for an integrated conceptual/theoretical framework on which the development of a health promotion intervention can be based. A faith community nursing intervention to promote health across the life span can use the four major sources of information (Bandura, 1997) in the development of a supportive-educative nursing intervention (Orem, 2001) to increase one's self-efficacy of health-promoting self-care behaviors (Pender et al., 2010) and one's self-care agency (Orem, 2001). The findings from Callaghan's studies (2003, 2005, 2006), that identified the importance of spiritual growth on older adults', adults', and adolescents' initiative and responsibility for self-care, also can be used in the development of the intervention. The use of this conceptual/theoretical framework in the development of the health promotion intervention could result in the increased practice of health-promoting self-care behaviors across the life span.

Two graduate nursing students assisted the researcher with the development of the intervention program. The program was developed as a faith community nursing intervention in order to take advantage of a community that is open to the mind-body-spirit connection and how that connection affects one's health. The program was also developed as a family intervention in order to take advantage of the social support that could be available when attending the sessions with another family member. Extensive literature reviews were done for the six session topics which reflect the six health-promoting self-care behaviors of spiritual growth, stress management, nutrition, physical activity, personal relations, and health responsibility. The topic of spiritual growth was developed as the foundation of one's wholistic health. The sessions were developed to consist of six two-hour presentations on these topics. One hour of the presentation would include information on that topic specific to adolescents, adults, and older adults presented via PowerPoint. Having family members hear information that is important for each other's health could lead to more support with the behavior changes and lifestyle modifications. The second hour of the presentation would focus on activities that increase self-efficacy of the specific healthy behavior. These activities would include performing the healthy behaviors, listening to and watching others perform the behaviors, providing encouragement from the presenters as well as from each other, and performing relaxation techniques including prayer, scripture readings, and meditation. In summary, the health promotion intervention program is a supportive-educative nursing system activity that is based on the findings of this meta-analysis study as well as on the results of previous studies (Callaghan, 2003, 2005, 2006). Since initiative and responsibility

for self-care was influenced by spiritual growth, this healthy behavior was identified as the foundation of health in the intervention program. The information related to the healthy behavior topics provided for the participants in this program may improve their self-care agencies. The activities included in the each of the topic sessions of the program may increase the participants' self-care self-efficacy levels. Finally, the outcome of increased practice of healthy behaviors may be the result for those participating in the program. The program's effectiveness in promoting health across the life span will be determined after the implementation of the faith community nursing intervention is completed.

CONCLUSIONS

The canonical correlation statistic identified the extent that self-care agency and self-care self-efficacy explained health-promoting self-care behaviors across the life span. The statistic identified one interpretable significant canonical variate that included the set of variables consisting of the four subscales of self-care agency and the four subscales of self-care self-efficacy and the set of variables consisting of the six subscales of health-promoting self-care behaviors. The identification of these relationships among the study concepts and use of the underlying models/theories gave direction for the development of a faith community nursing intervention to promote health across the lifespan. The intervention also addresses Healthy People 2020 objectives such as the promotion of daily physical activity, good nutrition, and emotional health and well-being. The future implementation of the intervention program can promote research and evidence-based practice within a faith community setting as well as provide a strategy for the measurement and documentation of intervention outcomes. Faith community nurses can play an integral role in facilitating intervention programs focusing on the promotion of health across the life span. More research is encouraged that implements interventions based on an integrated conceptual/theoretical framework and includes the reliable and valid measurement of outcomes. Limitations to the meta-analysis study reported, on which the health promotion intervention was based, included the convenience sampling strategy used to collect data and the low reliability (.67) of the passivity subscale of the Exercise of Self-Care Agency instrument. Further research investigating the relationships among the study variables with diverse populations could strengthen the generalizability of the results. Also further psychometric testing of the Exercise of Self-Care Agency scale is also recommended to identify items that may not contribute to the reliability and validity of the instrument.

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