THE EFFECTS OF A STRESS MANAGEMENT PROGRAM ON KNOWLEDGE AND PERCEIVED SELF-EFFICACY AMONG PARTICIPANTS FROM A FAITH COMMUNITY: A PILOT STUDY

Angeline Bushy, PhD, RN, FAAN[1]
Marietta P. Stanton, PhD, RN, CMAC[2]
Holly K. Freeman, MS, RN[3]

[1] Professor & Bert Fish Chair, School of Nursing, University of Central Florida, abushy@pegasus.cc.ucf.edu
[2] Professor, Capstone College of Nursing, University of Alabama, mstanton@bama.ua.edu
[3] Clinical Instructor, Capstone College of Nursing, University of Alabama, hfreeman@bama.ua.edu

ABSTRACT

Educational programs can be an effective intervention for anticipatory guidance and health promotion across the lifespan. A particular concern for health care providers in rural areas is how to access high-risk populations and then provide programs that are culturally and linguistically appropriate. In recent years, religious congregations (faith communities) have been identified as an effective way to reach hidden and vulnerable populations in rural as well as urban settings. This article presents a pilot study describing an educational intervention related to stress management with participants who were accessed through a faith community. Both quantitative and qualitative tools were used the measure the dependent variables. Quantitative data were obtained with pencil and paper assessment tools measuring levels of self-efficacy and knowledge about stress. Qualitative data helped determine types of stress participants experienced and if stress management techniques learned in the course were used to manage day-to-day stressful situations. While the setting for this study was urban, the findings are highly relevant to nurses who provide care to rural and other underserved populations with limited access to health care.

BACKGROUND

Educational program can be an effective intervention for anticipatory guidance and health promotion for at risk and vulnerable populations. The term vulnerability is used in reference to individuals and groups who experience risks that can be detrimental to health or can result in a health disparity. The purpose of this pilot study was to evaluate the effects of a stress management program on the knowledge level and perceived self-efficacy among a group of participants (N=17) who were recruited from a faith community located in New York.

Education can modify individuals' health beliefs and knowledge about certain health issues. However, knowledge in and of itself does not always result in changed behavior. Examples of other factors that contribute to behavior changes include perceived self-efficacy and its predictive value relative to a given behavior. Moreover, personal expectations associated with self-efficacy are culturally based and have been shown to mediate and reinforce lifestyle behaviors (Janz & Becker, 1984; Schaubroeck, Lamm & Xie, 2000).

The concept of self-efficacy has been widely discussed in the literature for several decades. Early on, Bandura (1977; 1982) found activities that promoted mastery of techniques to control behavior produced higher levels of self-efficacy, thereby enhancing

targeted behavior change. A decade later Stanton, Dittmar, Wooldridge & Lihjen (1992) found a statistically significant relationship between increased levels of self-efficacy and the number of formal smoking cessation classes attended by participants in their study. In other words, the more classes attended, the higher one's score on the self-efficacy measure and the greater the probability of long-term smoking cessation. Essentially, a body of literature reiterates that an increase in self-efficacy is instrumental in assisting patients, as well helping caregivers, to deal more effectively with a wide range of adverse and chronic health problems such as diabetes, asthma, cardio-vascular and pulmonary conditions, arthritis and multiple sclerosis (Barnason, Zimmerman, Nieveen, Schmarder, Carranza & Reilley, 2003; Borsody, Courtney, Taylor & Jairath, 1999; Clark & Dodge, 1999; Hellstrom, Lindamrk, Wahlberg, Fugl-Meyer, 2003; McKenzie & Peragine, 2003; Lorig, Ritter, Laurent & Fries, 2004; Raizi, Thompson & Hobart, 2004; Scherer & Schmeider & Shimmel, 1995; Vander der Palen, Klein, & Seydel, 1997). Increased self-efficacy also has a role in modifying high risk behaviors in order to achieve healthier outcomes such as engaging in a regular exercise program and smoking cessation to prevent and manage chronic health problems (Avey, Manthny, Robbins & Jacobson, 2003; McDougall, Montgomery, Eddy, Jackson, Nelson, Stark & Thomsen, 2003; Oetker-Black, Teeters, Cukr & Rininger, 1997; Stretcher, DeVellis, Becker & Rosenstock, 1986). Formal education programs are a cost effective strategy for enhancing self-efficacy and behavior change.

METHODS

This study examined the effects of a formal stress management program and its impact on participants' perceived self-efficacy. The goal of the intervention was to help participants become aware of stressful situations and then learn new coping behaviors to more effectively mediate these types of events.

Setting and Subjects

Participants were recruited from a faith community to attend a stress management course via announcements in the weekly church bulletin, during services and at other congregational functions. Participation in the program was voluntary and was provide at no cost to participants. Interested individuals were invited to contact the instructor by telephone at which time enrollment details were provided. The study received approval from the Institutional Review Board (IRB) Committee of the State University of New York at Buffalo. Each participant signed an informed consent prior to enrolling and procedures were undertaken by the investigator to insure confidentiality and anonymity.

The intervention study was conducted in a classroom located at a church in an inner city. Twenty-two individuals enrolled in the first class; 17 completed the program. The group met for 90 minutes over a six-week period. The curriculum, course materials and instruments were used with the permission of Pace University Health Care Center. At that time of this study, the investigator was a faculty member in the School of Nursing and had taught other stress management classes. The course included content on stress, reactions to stress, and instruction on several stress management techniques including

guided imagery, relaxation and abdominal breathing. Table 1 includes an overview of the program schedule and content.

Table 1
Overview of Stress Management Intervention Program

Class Session	Content	Activities
Week #1	• definition of stress • types of stress • individual variability • sources of stress	Complete pre-tests Homework briefing • log A • goals
Week #2	• review instruments • set goals • complete contract • personal/current sources • acute/chronic stress responses	Homework briefing • log A • goals
Week #3	• abdominal breathing exercises • relaxation exercises	Homework briefing • log A • goals
Week #4	• discuss video on stress and breathing • nutrition and exercise for decreasing stress • centering exercises	Homework briefing • log A • goals
Week #5	• you are not the Target Exercise • assessing your personal health • books, tapes, videos stress management • use of the library • community self-help and support groups	Homework briefing • log A • goals
Week #6	• principles of assertiveness/personal empowerment • Stress Club	• Contract reviews, goals and logs • complete post-tests • program evaluation

INSTRUMENTS

This study included both quantitative and qualitative approaches. In respect to quantitative methods, a pencil and paper 50-item instrument was used to assess participants' knowledge about stress. This tool (developed by and used with permission of Pace University) measured knowledge of stress and stress management techniques. Content validity tool was established via an expert panel. Self-efficacy, relative to stress management, was measured Likert-type tool having a five-point rating scale for each of the ten items. The instrument was developed by one of the authors (M.S.) for an earlier study (Stanton et al. 1992). The tool was modified to accommodate a fifth grade reading level of participants in this study. A second section included demographic questions for participants to complete. The self-efficacy scale had a reliability of $r>.80$ as determined in a previous study (Stanton et al. 1992). The survey tools were administered upon enrollment (pre-test) and repeated (post-test) upon completing the program.

Qualitative methods determined if and when participants identified stressful events in their lives; and, weather or not "healthier" stress management techniques were used on a more frequent basis as a result of taking the program. To collect qualitative data participants maintained a daily log in which they described day-to-day stressors and how they coped with these. Logs were later used as a learning tool and served as a reference point for participants during class discussions, as well as for content analyses purposes.

PROCEDURE

During the first class session participants' completed the pencil and paper survey to help them identify major source(s) of stress and their preferred response to stressor(s). The questions focused on six major categories of stress; specifically, over stimulation, frustration, under stimulation, anxious personality, Type-A behaviors and self-image. These data were not analyzed per se. Rather, the information helped participants to become more aware of life stressors and preferred coping styles. Subsequently with that information participants developed a written stress management plan (contract). Participants included a "self-reward" in their contract if they successfully achieved his or her stated goals and behaviors. Individuals monitored personal progress through log narratives. Upon completing the program, each participant rated their level of achievement with a letter grade (i.e., A, B, C) to determined if their self "reward" was earned. The stress management intervention program was evaluated after the last class meeting and again six months later to elicit feedback on the perceived usefulness of course materials, effectiveness of the instructor, as well as the learning environment.

DATA ANALYSIS

Analyses of quantitative data consisted of descriptive and comparative techniques. T-tests were performed on pre-test and post-test mean scores relative to knowledge level and self-efficacy. Chi-square analysis examined demographic items relative to self-efficacy and knowledge measures. Qualitative data obtained from the written logs were all analyzed weekly and again at the end of the course. Content analysis procedures were

undertaken with these self-reports to identify common themes and recurrent situations. In the analyses, all references to stressful events were tabulated for each individual; then averaged for the group as a whole. References to use of stress management techniques learned in the course were similarly tabulated. For the program evaluation frequencies and percentages were used in the analyses of the questionnaires.

RESULTS

Even though the sample was quite small (N=17), the group was highly diverse. Demographically, the group consisted of 16 females and one male including Caucasians (N=2), African Americans (N=11), Hispanics (N=3), and a Native American (N=1). Fewer than half (41%) characterized themselves as employed in a skilled/professional occupation, with the remainder (59%) classifying themselves as "somewhat skilled" or "unskilled." In terms of education, one individual had only completed grammar school, ten graduated from high school and six reported attending "some college." The average income for the group was $10,000 per year. All but one of the participants characterized themselves as being in "excellent" or "good physical health."

Paired t-tests compared the mean scores of the pre-test and post-test for the self-efficacy and knowledge measures. A statistically significant difference was found in the perceived levels of self-efficacy ($p<.002$) and on knowledge/health beliefs ($p<.05$). Differences in pre-test and post-test scores are depicted in Figure 1.

Chi-square analyses demonstrated that number of classes attended had a statistically significant relationship with changes in the pre-test and post-test self-efficacy scores ($p<.0015$). Chi-square analysis performed on demographic data demonstrated that level of education and annual income were the only two characteristics that related to the scores obtained on self-efficacy and knowledge measures ($p\approx .0015$). Cronbach's Coefficient A was used to calculate reliability for the self-efficacy scale ($r>.93$) and knowledge test ($r>.67$).

Changes in recognition and reaction to stress in the daily lives of the participants were derived from a content analysis of qualitative data found in the logs. The analysis revealed participants' perceptions of stress during early weeks of the course were quite different compared to the last half of course. For example, before taking the course one woman was unaware of the high level of stress she experienced in her job of 10 years. Ultimately, as a result of new insights she actually quit her job and went to work somewhere else and was happier for it. The logs further revealed which of the new stress management techniques were actually used by individuals. On average each participant noted about two stressful events over the first three weeks period. During the last half of the course, the average number of stressful events increased (on average) to four incidents. Table 2 highlights findings from participants' logs, specifically weekly averages of stressful events and use of stress management techniques.

Post-course evaluations indicated nearly all of the participants (95%) met their self-generated objectives and targeted behavior changes. The majority (90%) were highly satisfied with the instructor, course materials and the curriculum. The post-six month evaluation reflected similar feelings about the course content and materials (<.80%). Of those completing the program, nearly all reported abiding by their stress management plan. Overall the class averaged 95% for achieving objectives initially and again in six

months. Participants indicated they were eager to participate in other educational programs focusing on breast self-examination, nutrition and smoking cessation.

Table 2
Summary of Findings from Logs (N=17): Average (Number) of Stressful Events and Stress Management Techniques by Week

	Week -1	Week -2	Week–3	Week -4	Week -5	Week -6
Average Number of Stressful Events	1	2	2	2	3	4
Average Number of Stress Management Techniques Used	0	0	0	1	2	2

DISCUSSION

The results of this pilot study reinforced that a formal program on stress management increased knowledge and enhanced perceived self-efficacy among participants. The information in self-reported logs demonstrated that individuals became more adept at identifying stressful events over time and increased their reliance on use of stress management techniques learned in the course. Findings from the qualitative self-reports, supported by chi-square analysis revealed increases in self-efficacy were positively related to the number of classes attended. Essentially, attendance at the stress management classes increased knowledge level and self-efficacy, anecdotally and statistically. The logs in particular help participants identify stress producing situations as well as monitor progress in achieving their stated goal(s) over the six-week period. The reported awareness of stressful events and use of newly learned stress management techniques could indicate that increased knowledge and perceived self efficacy does indeed result in actual behavior change.

Of particular interest are characteristics of the participants in this study. Primarily socio-economically disadvantaged, participants predominately were of minority backgrounds with limited access to health prevention programs. Most stated they never had attended a formal health education program such as this one on stress management. Their educational background was extreme; specifically, one had very limited reading skills, while several others had attended some college and were proficient readers. The wide educational variation entailed a great deal of faculty time in explaining and clarifying content and materials on a one-to-one basis, which may have influenced changes in behavior for some individual.

There were serendipitous outcomes as well. For example, participants enjoyed talking with one another about events in their lives, and there were wide variations in self-reported stressors. Variations substantively were socioeconomic in nature associated with very low income and educational levels. At different times during the program, it became obvious the type and number of stressors confronting some individuals were far more complex than originally anticipated by the investigator associated with racism, extreme poverty and domestic violence. Individuals with overwhelming concerns were referred to various community support systems.

Future facilitators for programs of this nature are strongly encouraged to consider geographic, cultural and gender-related preferences of their audiences that could hinder or enhance acquisition of knowledge and self-efficacy. For example, a consumer-oriented health education programs must incorporate language, content and examples that are culturally relevant to a group. Pastors as well as other informal leaders of a faith community particularly in rural areas often are able to provide useful insights related to the socioeconomic background and cultural preferences of their congregation.

LIMITATIONS

Certainly this research is very limited in terms of generalizability associated with the small sample size, lack of control for intervening variables, and self-selection of the participants. While the logs seem to substantiate changes in behavior there were no other legitimate data sources to support the self reported short term or long term changes among participants. Nor were control measures in place to mange extraneous or intervening variables among program participants. Thus, self-reported changes noted during this program might be attributable to a Hawthorn effect among participants.

In respect to data analyses, these were limited to a comparison of pre-test and post-test scores. Due to the very small sample size, analyses were not undertaken to differentiate between or among groups by demographic and dependent variables. Future studies are recommended with larger diverse samples to determine the role of self-efficacy in modifying high risk behaviors among various cultural and ethnic populations.

IMPLICATIONS

The major implication of this pilot study is that enhanced self-efficacy and knowledge may increase the likelihood of positive health behavior change. However, to be truly effective it is critical that health education programs be tailored to the cultural, ethnic, educational, economic backgrounds and circumstances of the group. Language and examples of stress must be culturally sensitive and stress management techniques should fit the abilities and lifestyle of participants. Gender and geographic location also need to be considered. For example, residents in rural settings may encounter different kinds of stressors and have other coping preferences than urban counterparts. Differences may be associated with living in a more geographically and socially isolated setting in which access to services and health care providers may be more restricted. Additionally, available social support systems (or the lack there-of) can produce and modify stressful situations. Social structures may vary among residents in less populated regions compared to a highly populated region which in turn also impacts health behaviors.

The faith community is an excellent mechanism for reaching vulnerable individuals and providing educational programs at a low cost both rural and urban residents. In recent years a number of requests for proposals (RFPs) targeting faith communities have been sponsored by both federal and philanthropic organizations. In particular these RFPs target minority groups in rural and underserved settings. Programs such as the one described in this article could serve as a model for nurses to reach vulnerable groups in both urban and rural environments for the purpose of health promotion and anticipatory guidance.

Finally, findings in this small study revealed that self-efficacy and changes in knowledge level were enhanced by participation in a formal course. The enthusiasm of the participants in this program supports the effectiveness of such offerings to groups having limited access to health education and /or prevention programs.

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