Education to Ease Distress in Spouses of Cardiac Rehabilitation Patients

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December 15, 2017

Abstract

Spouses of cardiac rehabilitation (CR) patients can experience overwhelming distress during their partner's recovery, yet interventions to ease this distress are limited. While spouses have the ability to help influence their partner's recovery, little assistance or counseling has been offered to the spouses. Oncology and inpatient cardiology units have found educational packets helpful in reducing spousal distress. Therefore, an evidence-based interventional project to determine if education could ease distress among the spouses of patients who have received a coronary artery stent and enrolled in outpatient CR took place at a Midwestern hospital. Participants were spouses of patients who received a coronary artery stent and recovered on the Short Stay Unit. Education materials containing information about CR and interventions to manage stress were distributed to the spouses. The Perceived Stress Scale (PSS) and Cohen-Hoberman Inventory of Physical Symptoms (CHIPS) pre and post-surveys were used to measure the degree to which the spouses perceived their lives as stressful. Paired t-tests were used to analyze the data. While the results of the data analysis were not statistically significant, there was a decrease in the means on both the PSS and the CHIPS demonstrating a decrease in distress. While there was a very small sample size for this project, it can be stated that spousal education appears to be needed to help lower stress in the CR spouse.   CR spouses are vital to the recovery of their partners and should be provided with education to ease distress and assist in the recovery process of their partners.

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Cardiac Rehabilitation Patients

Over the decades, cardiac rehabilitation (CR) has evolved from a simple one step

approach to a multidisciplinary approach (Da Vico et al., 2014). This multidisciplinary approach

focuses on patient education, individually tailored exercise training, modification of risk factors

and the overall well-being of cardiac patients (Mampuya, 2012). Many benefits can be reaped

from enrollment in CR. Enrollment can limit the physiologic and psychologic effects of cardiac

illness, reduce the risk of sudden death or reinfarction, control cardiac symptoms, stabilize or

reverse the atherosclerotic process, and enhance the psychosocial and vocational status of

patients (Wenger, Rosenson & Braun, 2016). Additional benefits include mortality reduction,

symptom relief, smoking cessation counseling, improved exercise tolerance, and risk factor

modification (Mampuya, 2012). There are many indications for enrollment in CR, such as

myocardial infarction, coronary artery disease, angina, heart failure, coronary artery bypass graft

surgery, coronary angioplasty and stenting, valve replacement, or a pacemaker or implantable

cardioverter defibrillator (American Heart Association, 2016). While many indications exist for

enrollment, this project will focus on the spouses of the cardiac rehabilitation population that

have received coronary angioplasty and stenting.

Background and Significance of the Problem

While enrollment in CR can be profound and distressing to the patient, research has

shown that the spouses of these patients also experience changes in their lives that can be just as

alarming (Norman, 1997). Little has been provided for the spouse of these patients during CR.

For instance, spouses have reported experiencing fear, suffering from stress, and experiencing a

heightened sense of anxiety and depression (Fast, Steinke & Wright, 2009). Spousal distress also

occurs when spouses realize they must assume primary responsibility for everyday tasks after the patient has been discharged home (Davies, 2000). Moreover, a spouses' perceptions of quality of life were significantly lower than that of their partners in Phase II CR (Phillips, Alexander, Pepin & Riley, 2003).

According to O'Farrell, Murray and Hotz (2000), spouses have the ability to help influence their partner's recovery yet, receive little counseling or assistance from healthcare providers throughout the course of illness and recovery. During the recovery phase, spouses act as an important source of support for their partner. Spouses can continue to provide support as long as the support system isn't compromised by spousal distress (Pederson, van den Berg, Erdman, van Son, Jordaaen & Theuns, 2009). Further, one of the most common mechanisms to cope with distress is to seek informational support. Spouses tend to seek out information in order to become informed and to better cope with distress (Stewart, Davidson, Meade, Hirth & Makrides, 2000). It has been shown that care information provided by healthcare providers to the spouses of myocardial infarction patients helped to decrease spousal distress (Davies, 2000). In addition, an educational packet has been recognized to be helpful in other areas of study. For example, educational materials provided to spouses of cancer patients have also been found to help reduce spousal distress (Coolinge et al., 2013). Educational materials have assisted spouses in other fields of study, yet a gap exists in assisting spouses of CR patients with their distress.

Problem Statement

Enrollment of a patient in CR can leave overwhelming distress on the spouse and few studies exist to show the perceived level of distress a spouse experiences. Interventions to help ease distressed spouses are lacking.

Purpose of the Project

The purpose of this project is to determine if education can ease distress among the spouses of cardiac rehabilitation patients. Distress will be defined as the degree to which situations in one's life are appraised as stressful (Cohen, Kamarck & Mermelstein, 1983).

Clinical Question

Does education decrease distress in spouses providing support to their cardiac rehabilitation partners?

Outcomes

The spouse of a CR patient will have decreased distress by four weeks after reviewing the education packet as demonstrated by a lower score on the Perceived Stress Scale (PSS).

The spouse of a CR patient will have decreased distress by four weeks after reviewing the education packet as demonstrated by a lower score on the Cohen-Hoberman Inventory of Physical Symptoms (CHIPS).

Organization Assessment

A Midwestern hospital within a major health system has agreed to accommodate this project. The hospital serves an urban area as well as many surrounding rural areas and provides a wide array of cardiovascular services from ten cardiologists, three of whom are interventional cardiologists. The hospital contains ten catheterization labs, five operating rooms and provides outpatient services such as nuclear medicine, stress testing, echo evaluation of the heart and cardiac rehabilitation.

Within this Midwestern hospital is the Short Stay Unit (SSU), where outpatient cardiovascular procedures are prepped and recovered. Typical procedures that the 28 bed SSU accommodates are cardiac catheterizations, permanent pacemaker implants and generator changes, implantable cardioverter defibrillator (ICD) generator changes and peripheral and renal

angiograms. The SSU staff, which consists of registered nurses (RNs), registered nurse liaisons, and patient care assistants (PCAs) are willing to accommodate the project. Approval from the director of the SSU was obtained in order to gain access to the facility (See Appendix A). Readiness for change was indicated as the organization as a whole is looking to better incorporate the spouse in the care of the patient. The director is interested to see the results of the project in order to know how to better meet the needs of spouses.

A few barriers to this project have been identified and pertain to enrollment in CR. Barriers to patients joining CR include: willingness and readiness of both participant and spouse to make a lifestyle change, lack of transportation to and from the CR facility, inability to pay for CR, and Midwestern winter weather. Only minimal barriers exist in relation to use of the facility. For instance, the SSU affords the project the space, privacy, and time needed for completion. One unintended consequence when presenting this option to CR candidates is they may find that their spouse is in a greater amount of distress about their condition than they expected and therefore they may not be willing to enroll in CR due to the extra amount of stress they exert on their spouse.

Review of the Literature

A comprehensive review of the literature was conducted using PubMed, CINAHL, and ProQuest search engines. Key terms used in each search consisted of distress, stress, psychologic, cardiac rehabilitation, cardiac and cardiology, as well as spouse and partner. These search tactics revealed ten articles within the cardiology field, which were then put into a matrix for synthesis. A gap in the literature was revealed through conducting a literature review. It is evident that limited research exists on spousal distress and the needs of a spouse whose partner is enrolled in CR.

Synopsis of the literature reveals spouses play a major role in the patient's recovery. During the recovery phase, spouses have reported emotions such as fear, stress, heightened sense of anxiety and depression, uncertainty, and the need to seek out information and support in order to cope (Fast et al., 2009). Spouses act as a main support system for their partners and if the spouse becomes distressed at any point, the support system is compromised (Pederson et al., 2009; Moser & Dracup, 2004). As the spouse's perceived level of psychological distress is lessened, the patient's physical functioning, pain, vitality, social functioning and mental health improve (Fast et al, 2009). Further focus on interventions to alleviate the spousal distress must be examined.

In order to ease psychological distress among spouses of cardiology patients, interventions such as stress management and coping strategies should be examined (O'Farrell et al., 2001). One coping strategy that was evaluated was the use of support groups. Through the use of the support group, spouses' needs were met and both the spouse and the patient were able to recognize their needs and form a support system (Norman, 1997). A separate study by Santavirta, Kettunen, & Solovieva (2001) also recognized the need to address coping strategies in spouses whose partners had just experienced an acute myocardial infarction. The psychological distress spouses experience was best managed with the coping strategies of reappraisal and seeking social support. These emotional focused coping strategies assisted in alleviating psychological distress in the spouse. Another study focused on the coping strategy of seeking out additional information. In order to better cope with their partner's condition after a myocardial infarction, spouses sought alternative avenues to gain additional information as a coping mechanism (Stewart et al,, 2000).

Incorporating the spouse in the plan of care and providing coping strategies is important. Psychological distress in spouses of congestive heart failure patients can result in unfavorable change in heart failure symptoms and overall general health. Therefore, it has been suggested that the spouse should be included in the plan of care (Rohrbaugh, Shoham, Cleary, Berman & Ewy, 2009). Moser & Dracup (2004) discovered that spouses experience heightened anxiety and depression after their partner has experienced a myocardial infarction and therefore particular attention should be paid to the spouses. By incorporating the spouse in the plan of care, patient outcomes were improved.

Additional studies focusing on psychological distress in the spouses of cardiology patients suggest providing educational information and reassurance to the spouse. Spousal attitude influences CR effectiveness; therefore educational information and reassurance must be provided to the spouse in order to improve psychological distress (Phillips et al., 2003). Davies (2000), also found that by providing care information to the spouses upon hospital discharge helped decrease anxiety and depression in distressed caregivers.

Theoretical Framework

The social support theory as described by Cohen & McKay (1984) lays the theoretical framework for this project. Social support is the perception and actuality that one is cared for, has assistance available from other people, and that one is part of a supportive social network (Pierce, Baldwin & Lydon, 1997). Social support systems consist of continuing social aggregates that provide individuals with opportunities for feedback about themselves and for validations of their expectations of others. These supportive others are said to provide information and cognitive guidance, tangible resources and aid, and emotional sustenance in times of need (Sarason & Sarason, 2013). Additionally, many different perspectives on social support exist, for

instance, supportive actions, appraisal, social cognition, symbolic interactionism, and relationships. The aspect of support emphasized on these perspectives within the social support theory include: supportive behaviors provided by others; perceived availability of actual support; global, evaluative cognitive representation of others; social roles; and companionship, undermining and intimacy (Pierce et al., 1997).

The supportive actions approach model predicts how supportive actions should promote coping, when related to stress and health outcomes (Cohen & McKay, 1984; Cutrona & Russell, 1990) (See Figure 1 below). Within this model, social support promotes coping and reduces the effects of a stressor, insofar as the form of assistance matches the demands of the stressor. Each stressful situation places specific demands on the affected individual (Cohen & Lakey, 2000). The social support theory builds a supportive social network that is present in the supportive actions approach. This approach provides security and comfort for the spouses, which is necessary when their partner is undertaking cardiac rehabilitation (Sarason & Sarason, 2013). If spouses have the education and support they need, distress can be alleviated and support can then be offered to their partners. Spouses can provide support through cognitive guidance, tangible resources and emotional guidance to their partner (Pederson et al., 2009). The social support theory provides the essential framework needed to guide spouses of CR patients through times of distress.

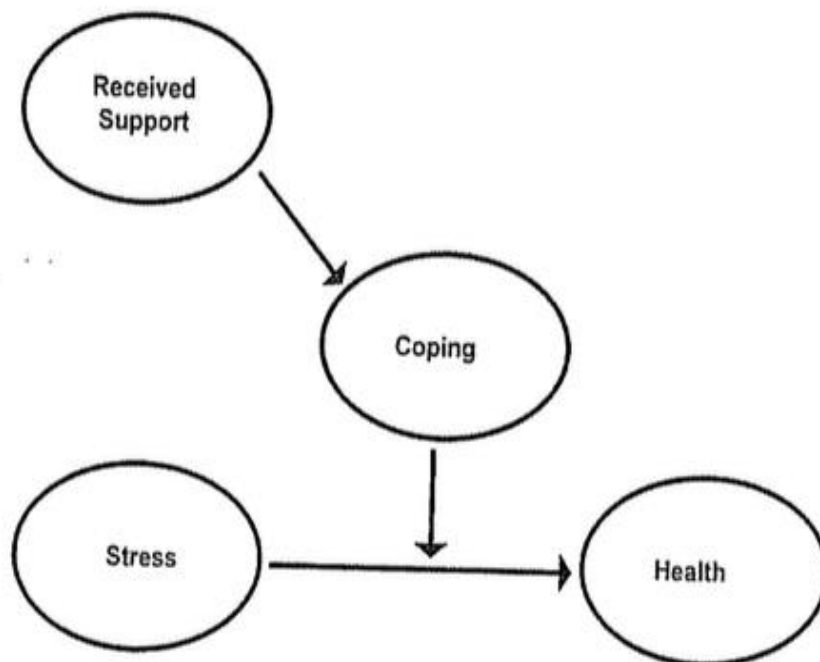Figure 1: Supportive Actions Approach

Figure 1: The supportive actions approach model from Choen & McKay (1984). Model depicts

how supportive actions should promote coping, when related to stress and health outcomes.

Methodology

Sample

Spouses of patients who received a coronary artery stent and recovered on the Short Stay Unit were invited to participate in the project. The spouse had to be 19 years of age or older. Additionally, only those who were able to speak and read English were included. A sample of ten or more spouses would have been ideal for this project.

Setting

The setting for this project was a Midwestern hospital's Short Stay Unit. In order to gain access to this setting, a letter of approval from the Short Stay Unit director was obtained (See Appendix A). IRB approval from Sanford USD Medical Center and Nebraska Methodist College was also obtained.

Design

The design of this project was an evidence-based interventional design using pre and post-surveys to determine whether education for the spouses of CR patients decreased spousal distress. Spousal distress is defined as the degree to which situations in one's life are appraised as stressful (Cohen et al., 1983). In order to measure spousal distress, the Perceived Stress Scale (PSS) and the Cohen-Hoberman Inventory of Physical Symptoms (CHIPS) tools were used (Cohen, 2015). Permission to use these tools is not necessary when used for nonprofit academic research or nonprofit educational purposes, as stated on Dr. Cohen's website (See Appendix B).

Tools

To obtain demographic data on the population of interest, the primary investigator developed the Demographic Survey. This tool was used to collect data on the age, sex, education, employment, ethnicity and race.

The PSS is a 10-item scale that was first developed and used in 1988 by Cohen and Williamson (Cohen & Williamson, 1988) (See Appendix C). This tool allows the spouses to indicate how often they have found their lives unpredictable, uncontrollable, and overloaded in the last month. The purpose of the tool is to assess the degree to which people perceive their lives as stressful. Poor self-reported health, elevated blood pressure, depression, and susceptibility to infection are all associated with high levels of stress (Cohen & Janicki-Deverts, 2012). The PSS is not a diagnostic instrument, so there are no cut-offs. There are only comparisons between people in the in their sample. Scoring for the PSS is as follows: reverse the scores of items 4, 5, 7, 8 (e.g. 0=4, 1=3, 2=2, etc.) and then sum across all 10 items. The responses on the pre and post-survey PSS were given an identification variable, where 0 = never, 1 = almost never, 2 = sometimes, 3 = fairly often, and 4 = very often. Internal consistency of the PSS was reported to be .78 and the validity correlates in a predicted way with other measures of stress (Cohen & Williamson, 1988).

Thirty-three common physical symptoms are rated on a 5-point likert scale in the CHIPS tool (See Appendix C). Each item on the scale relates to how much that item bothered or distressed the spouse during the past two weeks. The purpose of this scale is to measure the perceived burden from physical symptoms and the resulting psychological effect. The internal reliability of this tool was reported to be .88. In a recent article (Allen, Wetherell & Smith, 2017), the CHIPS tool was described as a multidimensional tool with good construct and discriminate validity.

Heart and Vascular Liaisons

The Heart and Vascular Liaisons (HVL) are a group of seven RNs who assist with patient education on the SSU. HVL are responsible for educating the patient and family, during the

patient's recovery phase on the SSU, on the procedural findings, medications, follow up, and

cardiac rehabilitation.

Education Packet

An education packet containing interventions to manage stress was distributed to the

spouses after they completed the pre-test. The HVL or primary investigator reviewed the packet

with the spouse. The packet contained information about CR, resources for maintaining heart

health during times of distress and interventions to manage and cope with stress. Information for

this packet was obtained from the American Heart Association (AHA), UpToDate and from the

literature review. The educational packet was distributed solely to the spouses of CR patients.

Data Collection

After Institutional Review Board (IRB) approval from Nebraska Methodist College and a

Midwestern Hospital was received, data collection was initiated. Data was not collected until

informed consent (See Appendix D) was obtained. In order to gain informed consent, the

primary investigator or HVL contacted the Clinical Care Coordinator (CCC) of the SSU to

determine which patients had received a coronary artery stent. Upon receiving this information,

the primary investigator or HVL then proceeded to the patient's room on the SSU and introduced

themselves and the project. If the spouse was willing to participate, a letter of consent was

distributed to the spouse to voluntarily invite them to participate in the project. The letter was

distributed on the same day as the procedure, prior to discharge. After receiving consent from the

spouse, data collection began.

Each of the surveys and demographic data sheet were coded with a number so that

anonymity was preserved and data could be analyzed on the pre and post-surveys. Each spouse

had the same number on both pre and post-surveys. For example, subject 1 had 1a on both the

PSS and CHIPS for the pre-survey and then 1b was on the PSS and CHIPS for the post-survey.

The primary investigator had a list that provided the name of the spouse and the corresponding

numbers, which were kept in a locked drawer. The written pre-survey tools were distributed to

the spouse by either the primary investigator or the HVL and information on the survey was

reviewed with the spouse upon distribution. Demographic data collected from the spouse

included: sex, age, education, employment, ethnicity, and race. Baseline stress measurements

were collected via the PSS and CHIPS tools. The spouse completed the pre-surveys in the

privacy of the partner's room on the SSU. After the surveys were distributed to the spouse and

completed, education describing interventions to ease distress was also distributed and reviewed

with the spouse (See Appendix E).

Completed pre-surveys were collected from the spouse by the HVL or primary

investigator prior to the patient being discharged from the SSU. The completed pre-surveys were

placed in a manila envelope in a locked drawer in a locked room on the SSU by the HVL or

primary investigator. The primary investigator, clinical care coordinator and HVL had access to

the locked drawer. Every Monday, the primary investigator collected the completed pre-surveys.

Additionally, the primary investigator was on the SSU two to three days a week to assist with

distribution of the educational packet and surveys.

Approximately four weeks after the spouse had received the educational packet and had

completed the pre-surveys, the primary investigator conducted a telephone interview of the

spouse to obtain the post-survey data. A four-week time frame was chosen as patients are usually

enrolled in cardiac rehabilitation and spouses are settled back into their home routine by this time

period. In addition, the tools were developed to ask for thoughts and feelings within the last two

weeks to a month, which correlated to the four week time period. A phone call at the four week

time frame was necessary as many patients and their spouses travel a significant distance to have their procedure, and therefore an in person survey would have been difficult to obtain. In addition, spouses rarely come with their partners to CR thus making it difficult to collect the data in person. While an in person post-survey could potentially be less stressful to the spouse, it was not feasible in this setting and therefore a follow up telephone call had to be conducted. During this telephone conversation, the pre-survey number was matched to the post-survey number. The post-survey questions were identical to the pre-survey questions. Post-surveys were placed in a manila envelope and stored in a locked drawer, located within a locked room, on the SSU. Surveys were collected from the SSU every Monday by the primary investigator.

All data were entered into SPSS on a password-protected computer only accessible to the primary investigator. This project took place over a 10-week period.

Plan for Sustainability

This project can be sustained on the SSU by the HVLs as they are frequently in contact with the patient's spouse. With approval from hospital leadership, the HVLs can continue to work with the spouses of CR patients if the results of this project demonstrate that reviewing the educational packet is important to decreasing distress in the spouse. Sustaining this project can also lead to better patient outcomes and higher patient and spouse satisfaction.

Ethical Considerations

As the primary investigator and an employee of a Midwestern medical center, this project did not result in promotion or compensation through the work setting, nor did it impact employment. Spouses also did not receive compensation for completing the surveys. All ethical considerations were observed in this study related to IRB approval, human subject rights,

informed consent, confidentiality/anonymity procedures, data collection and analysis of data with reporting.

Data Analysis

Data collected from the pre and post-surveys were entered into SPSS and was analyzed with the help of a Nebraska Methodist College statistician. By creating an identification variable, numbering each survey, anonymity of each subject was insured. A paired t-test was used to analyze the data from the spouses' pre and post-surveys completed using the PSS and CHIPS tools. Demographic data was analyzed using descriptive statistics. Chronbach's alpha was also calculated for this sample. Chronbach's alpha is performed to evaluate the internal consistency of a tool as it relates to reliability. The higher the number calculated for Chronbach's alpha, the better the reliability, and this provides knowledge that the tools were reliable for this sample.

Results

A total of eight participants, seven female and one male, volunteered for this project. Ages ranged from 55 years of age to greater than 75 years of age. All of the spouses had some form of education post high school, were retired, and were non-Hispanic/Latino. One of the spouses was of the race American Indian or Alaska Native and seven were white. Paired t-tests were used to determine the degree to which the spouses perceived their lives as stressful and if the intervention of education made a difference. The paired t-tests looked at the difference in the mean scores of the pre and post-surveys.

The PSS was used to determine if the spouse of a CR patient would have decreased distress by four weeks after reviewing the education packet. The PSS is not a diagnostic instrument, so there are no cut-offs. There are only comparisons between participants in the sample. The PSS pre-survey resulted in a mean score of 15.75 and a post-survey resulted in a

mean score of 12.375. However, this was not significant at a level of p<0.05. (See table 1 & table

2). Cronbach's alpha was calculated for the PSS tool and resulted in a coefficient 0.674. In most

settings, a coefficient of 0.70 or higher is considered acceptable and a coefficient greater than or

equal to 0.9 correlates to an excellent internal consistency or reliability for sub parts of the tool

that are measuring the same attribute (Cronbach's alpha, 2017).

Table 1

Mean Score on the PSS Pre and Post Intervention

PSS	N	Mean	SD	SEM
Pre PSS score	8	15.75	7.34361	2.59636
Post PSS score	8	12.375	3.20435	1.13291

Table 2

Paired t-Test Statistics on the PSS

PSS	Mean	SD	SEM	t	Df	Sig. (2 tailed)
Pre PSS score Post PSS score	3.375.00	5.80486	2.05233	1.644	7	0.144*

*p<.05

The CHIPS was used to determine if the spouse of a CR patient would have decreased

distress by four weeks after reviewing the education packet. The paired t-tests looked at the

difference in the mean scores of the pre and post-surveys. Thirty-three common physical

symptoms are rated on a 5-point likert scale in the CHIPS tool. Each item on the scale relates to

how much that item bothered or distressed the spouse during the past two weeks. The purpose of

this scale was to measure the perceived burden from physical symptoms and the resulting

psychological effect. Like the PSS, there are no cut-offs, only comparisons between the

participants in the sample. The pre-survey CHIPS mean score was 18.00 and the post-survey

mean score was 10.875. While the mean scores decreased from the CHIPS pre-survey to the

post-survey, the paired t-test was not significant at a level of p<0.05. (See table 3 & table 4).

Cronbach's alpha was calculated for the CHIPS tool with a coefficient of 0.922.

Table 3

Mean Score on the CHIPS Pre and Post Intervention

CHIPS	N	Mean	SD	SEM
Pre CHIPS score	8	18.00	15.08074	5.33185
Post CHIPS score	8	10.8750	10.02051	3.54279

Table 4

Paired t-Test Statistics on the CHIPS

CHIPS	Mean	SD	SEM	t	Df	Sig. (2 tailed)
Pre CHIPS score Post CHIPS score	7.12500	12.07639	2.05233	1.669	7	0.139*

*p<.05

Discussion

This EBP project, with a small sample size, provides insight into the distress that spouses' of cardiac patients who receive a coronary artery stent in the outpatient setting experience. The results revealed that spouses experience distress, related to the specific situation psychologically and physically. While there was a very small sample size and this project was just a starting point, it can be stated that spousal education appears to be needed to help lower stress in the CR spouse. One outcome of this project was that the CR patient would have decreased distress by four weeks after reviewing the education packet as demonstrated by a lower score on the Perceived Stress Scale (PSS). While the analysis of data was not statistically significant, there was a decrease in the perceived level of stress from the PSS pre-survey to the post-survey. This is evident as the spouses act as a source of support during the immediate recovery phase and throughout CR. A larger sample size may provide significance. A Cronbach's alpha was completed on the PSS tool to determine reliability/internal consistency of

the tool with this sample. The results demonstrated a reliability statistic of 0.674. It is desirable

for reliability to be greater than 0.70, however, this sample for this project was very small with a

N of 8. This alone could contribute to the lower reliability.

While the mean scores decreased from the CHIPS pre-survey to the post-survey, the

paired t-test results was not significant at a level of 0.05 (See table 3 & table 4). It cannot be

concluded statistically that spousal education was fully effective in decreasing distress in

spouses. However, perhaps with a larger sample the decrease in the means would be significant.

Cronbach's alpha was calculated for the CHIPS tool with a coefficient of 0.922. This coefficient

correlates to an excellent internal consistency.

Analyzed data supports current literature that states spouses have the ability to help

influence their partner's recovery (Pederson et al., 2009; Moser & Dracup, 2004). Further,

education and social support promotes coping and reduces the effects of a stressor as witnessed

in the results section. The decrease in distress from the pre-surveys to the post-surveys justifies

the need for the social support theory as described by Cohen & McKay (1984). Here, social

support is the perception and actuality that one is cared for, has assistance available from other

people, and that one is part of a supportive social network (Pierce, Baldwin & Lydon, 1997). As

long as the support system isn't compromised, for instance by spousal distress, spouses can

continue to provide needed support to their partners (Pederson et al, 2009). The decrease in

distress also promotes the Supportive Actions Approach Model by Cohen & McKay (1984),

where supportive actions promote coping, when related to stress and health outcomes.

When spouses are provided with proper education, distress can be lessened and support

can then be offered to their partners. The decrease in distress was anticipated as research from

other fields of study has shown that education provided to the spouses by healthcare providers

decreased spousal distress. Prior studies on inpatient cardiology and oncology units that have

shown educational information and reassurance reduced psychological distress (Phillips et al.,

2003). This project also helps support Davies (2000) claim that providing care information to the

spouses upon hospital discharge helped decrease anxiety and depression in distressed caregivers.

Overall, the decrease in spousal distress from this project sheds light on the need to provide

spousal education and reassurance to the spouses of patients.

Nursing Implications

The impact of the project affects nursing staff, as they are responsible for providing

education prior to the patient being discharged. The project has revealed that the spouse must

also be included in the education process prior to discharge since they also experience distress.

Providing education to the spouse about the procedure, CR, and ways to ease distress has been

shown to decrease distress in the spouse and should now be incorporated into the discharge

routine. Additionally, follow up phone calls from the HVL should also incorporate the spouse

and evaluate their level of distress and provide education and reassurance as needed. In the

future, if distress among spouses remains high during the recovery phase and/or CR phase, a

spousal support group could be set up. This project also has the potential to alter the way

education is provided hospital wide and should be trialed on other surgical units.

Limitations

A variety of limitations that could have affected the results of the study are evident in this

project. Only one Midwestern hospital was used for the project. Within this Midwestern hospital,

only the spouses' of patients who received a coronary artery stent and enrolled in outpatient CR

were invited to participate. HVLs and the primary investigator distributed education packets and

while the team members distributing the education packet were all RNs, there could have been

inconsistency of the information provided and the format in which it was provided, even though the primary investigator provided specific teaching to all the distributors of the education. Also, the varying format and collection of the pre and post-surveys were not succinct. The pre-surveys were in print format and completed in the privacy of the spouses' room on the SSU. The post-surveys were completed via a telephone call from the primary investigator. At the time of the telephone call, the spouse did not have a blank survey in front of them to use as a reference and bias from the primary investigator could have been introduced at this time. Additionally, during the telephone interview, some spouses were confused on the question being asked and had trouble remembering and understanding the responses to the scales used to score the survey question. The small sample size must also be claimed as a limitation to this project.

Conclusion

The purpose of this evidence-based project was to determine if education could ease distress among the spouses of CR patients. While it could not be statistically shown that the spouse of a CR patient had decreased distress by four weeks after reviewing the education packet as demonstrated by a lower score on the PSS and CHIPS scales, there was a decrease in the overall amount of distress a spouse experiences. Perhaps conducting this study with a larger sample size would result in statistical significance. Education helps to play a role in reducing distress in spouses providing support to their CR partner. Future research with a more diverse and larger sample size could also yield varying results since this project was comprised of all non Hispanic/Latinos and retirees and seven of the eight participants were female. It would also be interesting to see if there was a difference in distress and how it was handled for male spouses versus female spouses. This evidence-based project aids in bridging the gap in the literature by involving spouses in the patients' plan of care and discharge education. Further research should

be continued not only for spouses of CR patients but also for spouses who provide the support to

patients with other diagnoses.

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Appendix A: Support for the project

From: Obrien-Johnson,Bridget
Sent: Monday, November 21, 2016 3:18 PM
To: Jelsma,Kathryn
Subject: RE: Capstone project

Katy,
I support your capstone project.
Thank you for asking.

Bridget O'Brien-Johnson, RN, MSN, CNML
Cardiovascular Services
Director-CCL, Stress Lab, Nuclear Medicine, PET/CT, Outreach,
Echo/Vascular, EKG/Holter, Short Stay Unit, Cardiology Program
1301 W 18th Street
Sioux Falls SD 57117
Phone: (605) 312-1807
Fax: (605) 312-1810

Appendix B: Permission to use tools

Permissions: Permission for use of scales is not necessary when use is for nonprofit academic research or nonprofit educational purposes. For other uses, please contact the lab at commoncoldproject@andrew.cmu.edu for instructions.

Appendix C: Tools

Perceived Stress Scale- 10 Item

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, please indicate with a check how often you felt or thought a certain way.

1. In the last month, how often have you been upset because of something that happened unexpectedly?

___0=never   ___1=almost never   ___2=sometimes   ___3=fairly often   ___4=very often

2. In the last month, how often have you felt that you were unable to control the important things in your life?

___0=never   ___1=almost never   ___2=sometimes   ___3=fairly often   ___4=very often

3. In the last month, how often have you felt nervous and "stressed"?

___0=never   ___1=almost never   ___2=sometimes   ___3=fairly often   ___4=very often

4. In the last month, how often have you felt confident about your ability to handle your personal problems?

___0=never   ___1=almost never   ___2=sometimes   ___3=fairly often   ___4=very often

5. In the last month, how often have you felt that things were going your way?

___0=never   ___1=almost never   ___2=sometimes   ___3=fairly often   ___4=very often

6. In the last month, how often have you found that you could not cope with all the things that you had to do?

___0=never   ___1=almost never   ___2=sometimes   ___3=fairly often   ___4=very often

7. In the last month, how often have you been able to control irritations in your life?

___0=never   ___1=almost never   ___2=sometimes   ___3=fairly often   ___4=very often

8. In the last month, how often have you felt that you were on top of things?

___0=never   ___1=almost never   ___2=sometimes   ___3=fairly often   ___4=very often

9. In the last month, how often have you been angered because of things that were outside of your control?

___0=never   ___1=almost never   ___2=sometimes   ___3=fairly often   ___4=very often

10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

___0=never   ___1=almost never   ___2=sometimes   ___3=fairly often   ___4=very often

CHIPS

Mark the number for each statement that best describes HOW MUCH THAT PROBLEM HAS BOTHERED OR DISTRESSED YOU DURING THAT PAST TWO WEEKS INCLUDING TODAY. Mark only one number for each item. At one extreme, **0 means that you have not been bothered by the problem**. At the other extreme, **4 means that the problem has been an extreme bother.**

HOW MUCH WERE YOU BOTHERED BY:

1. Sleep problems (can't fall asleep, wake up in middle of night or early in morning)	0 1 2 3 4
2. Weight change (gain or loss of 5 libs. or more)	0 1 2 3 4
3. Back pain	0 1 2 3 4
4. Constipation	0 1 2 3 4
5. Dizziness	0 1 2 3 4
6. Diarrhea	0 1 2 3 4
7. Faintness	0 1 2 3 4
8. Constant fatigue	0 1 2 3 4
9. Headache	0 1 2 3 4
10. Migraine headache	0 1 2 3 4
11. Nausea and/or vomiting	0 1 2 3 4
12. Acid stomach or indigestion	0 1 2 3 4
13. Stomach pain (e.g., cramps)	0 1 2 3 4
14. Hot or cold spells	0 1 2 3 4
15. Hands trembling	0 1 2 3 4
16. Heart pounding or racing	0 1 2 3 4
17. Poor appetite	0 1 2 3 4
18. Shortness of breath when not exercising or working hard	0 1 2 3 4
19. Numbness or tingling in parts of your body	0 1 2 3 4
20. Felt weak all over	0 1 2 3 4
21. Pains in heart or chest	0 1 2 3 4
22. Feeling low in energy	0 1 2 3 4
23. Stuffy head or nose	0 1 2 3 4
24. Blurred vision	0 1 2 3 4
25. Muscle tension or soreness	0 1 2 3 4
26. Muscle cramps	0 1 2 3 4
27. Severe aches and pains	0 1 2 3 4

28. Acne		0	1	2	3	4
29. Bruises		0	1	2	3	4
30. Nosebleed		0	1	2	3	4
31. Pulled (strained) muscles		0	1	2	3	4
32. Pulled (strained) ligaments		0	1	2	3	4
33. Cold or cough		0	1	2	3	4

PSS Scoring

PSS-10 scores are obtained by reversing the scores on the four positive items, e.g., 0=4, 1=3, 2=2, etc. and then summing across all 10 items. Items 4, 5, 7, and 8 are the positively stated items.

PSS-10 scores are obtained by reverse coding items 4, 5, 7, and 8 and then summing the reverse coded items with the remaining items. For example:

Item	Raw Data	Coded Data
1	0	0
2	**4**	**0**
3	**1**	**3**
4	2	2
Score		5

Item	Raw Data	Coded Data
1	0	0
2	4	4
3	1	1
4	**2**	**2**
5	**0**	**4**
6	3	3
7	**4**	**0**
8	**1**	**3**
9	3	3
10	1	1
Score		21

CHIPS Scoring

To create a total score, sum the scores across the 33 items.

The CHIPS is a list if 33 common physical symptoms. Items were carefully selected so as to exclude symptoms of an obviously psychological nature (e.g., felt nervous or depressed). The scale does, however, include many physical symptoms that have been traditionally viewed as psychosomatic (e.g., headache, weight loss). Each item is rated for how much that problem bothered or distressed the individual during the past two weeks. Items are rated on a 5-point scale from "not at all" to "extremely".

Demographic Survey

1. What is your age?
     a. 18-24 years old
     b. 25-34 years old
     c. 35-44 years old
     d. 45-54 years old
     e. 55-64 years old
     f. 65-74 years old
     g. 75 years or older
2. What is your sex?
     a. Male
     b. Female
3. What is the highest degree or level of school you have completed?
     a. No schooling completed
     b. 8th grade
     c. Some high school, no diploma
     d. High school graduate, diploma or the equivalent (for example: GED)
     e. Some college credit, no degree
     f. Trade/technical/vocational training
     g. Associate degree
     h. Bachelor's degree
     i. Master's degree
     j. PhD or Doctorate degree
     k. Other: _____.
4. Employment status: Are you currently…?
     a. Employed for wages
     b. Self-employed
     c. Out of work and looking for work
     d. Out of work but not currently looking for work
     e. A homemaker
     f. A student
     g. Military
     h. Retired
     i. Unable to work
5. Ethnicity
     a. Hispanic/Latino
     b. Not Hispanic/Latino
6. Race
     a. American Indian or Alaska Native
     b. Asian
     c. Black or African American
     d. Native Hawaiian or other Pacific Islander
     e. White

Appendix D: Informed Consent

Institutional Review Board
Informed Consent Statement

Title of Project: Education to Ease Distress in Spouses of Cardiac Rehabilitation
                                     Patients

Principle Investigator: Katy Jelsma, Short Stay Unit SMC, Sioux Falls, SD 57105
                                     (605) 312-1800 kathryn.jelsma@methodistcollege.edu
                                     Under the direction of Dr. Linda Foley, Nebraska Methodist
College

Purpose of the Study:
The purpose of this project is to determine if education can ease distress among the spouses of
cardiac rehabilitation patients.

Procedures to be followed:
You will be asked to answer a 5 question demographic survey
You will be asked to answer a 10-question survey and a 33-question survey.
You will receive a follow up phone call 4 weeks later and will be asked the same survey
questions.

Risks:
There are no risks in participating in this project beyond those experienced in everyday life.
Some of the questions are personal and might cause discomfort. Answering of questions is
voluntary and you may skip questions if you are uncomfortable answering them. Participants
may withdraw at any time without penalty or loss of benefits of the cardiac rehabilitation
program.

Benefits
- You might learn more about yourself by participating in this study. You might have a better
  understanding of how important relationships are to you.

- This research might provide a better understanding of how relationships affect recovery from
  cardiac interventions.

Duration:
It will take about 15 minutes to complete the questions. It will take about 15 minutes to complete
the phone call.

Statement of Confidentiality:
The surveys and phone call does not ask for any information that would identify who the
responses belong to. Therefore, your responses are recorded anonymously. If this research is
published, no information that would identify you will be included since your name is in no way
linked to your responses.

Right to Ask Questions:

The researcher conducting this study is Katy Jelsma. You may ask any questions you have now. If you later have questions, concerns, or complaints about the research please contact Katy Jelsma at 605-312-1800 during the day.

If you have questions regarding your rights as a research subject, you may contact a member of the NMC Institutional Research Board at (402) 354-7263 (ask to speak with the IRB Chair). You may also call this number with problems, complaints, or concerns about the research. Please call this number if you cannot reach research staff, or you wish to talk with someone who is an informed individual who is independent of the research team.

General information about being a research subject can be found on the Office of Human Research Protections (OHRP) website: http://www.hhs.gov/ohrp/index.html.

Compensation: You will not receive compensation for your participation.

Voluntary Participation: You do not have to participate in this research. You can stop your participation at any time. You may refuse to participate or choose to discontinue participation at any time without losing any benefits to which you are otherwise entitled.

You do not have to answer any questions you do not want to answer.

For this study you must be 18 years of age older to consent to participate in this research study.

Completion and return of the survey implies that you have read the information in this form and consent to participate in the research.

Please keep this form for your records or future reference.

Appendix E: Education Packet

What is Cardiac Rehabilitation?

- A Supervised exercise program created by a team of providers
- Exercises such as walking to gain and maintain endurance, strength and flexibility
- Life long benefits

Resources For Heart Health

- Your cardiac rehabilitation program and local hospital or clinic
- American Association of Cardiovascular and Pulmonary Rehabilitation www.aacvpr.org
- American Diabetes Association 800-342-2383 www.diabetes.org
- American Heart Association 800-242-8721 heart.org
- Your Guide to Lowering Your Blood Pressure with DASH www.nhlbi.nih.gov/health/public/ heart/hbp/dash
- National Heart, Lung, and Blood Institute 301-592-8573 www.nhlbi.nih.org
- WomenHeart: The National Coalition for Women with Heart Disease 202-728-7199 www.womenheart.org

Managing Stress and Coping

The effects of stress on the body can have many detrimental effects on your health. Emotional stress can lead to the following:

- High blood pressure
- Increased substance abuse and illness
- Less resistance to disease
- Depression

Tips to Reduce Stress

- Eat a healthy diet and exercise regularly
- Talk about your stressful situations with someone you trust
- Stay organized to help manage your time more efficiently
- Ask for help – no one can do it alone!
- Use relaxation techniques to calm your mind and body
- Get professional help if you need it

Coping Tips

Spouses often feel they must tend to their partner's needs full time. Burning yourself out doesn't help anyone and can have negative affects on your health. It is not selfish to take a break to care for yourself; it is essential.

- **Give yourself a break**
  - Set priorities
  - Go for a walk each chance you get, take a long bath, have lunch with a friend, nap or do nothing for an hour
- **Accept help**
  - Accept help when it's offered and be willing to ask for help when you need it
- **If you feel depressed**
  - Know that stress should gradually lessen
  - Treatment can help you find hope – even when you think nothing can help
  - Common signs of depression
    - Feeling down most of the time
    - Feeling guilty or helpless
    - Losing pleasure in things you used to enjoy
    - Sleeping less or more than normal
    - A big rise or fall in appetite or weight
    - Feeling restless or irritable
    - Feeling weak, tired or low in energy
    - Trouble focusing, remembering, or making decisions
    - Feeling angry or agitated. This may be the only sign more common in men

Exercise: Walking 101

The American Heart Association recommends that adults get 150 minutes or more of moderate-intensity physical activity or 75 minutes of vigorous activity each week.

- **Begin with short distances.** Start with a stroll that feels comfortable (perhaps 5-10 minutes) and gradually increase your time or distance each week by 10-20 percent by adding a few minutes or blocks. If it's easier on your joints and your schedule to take a couple of 10- to 20-minute walks instead of one long walk, do it!

- **Focus on posture.** Keep your head lifted, tummy pulled in and shoulders relaxed. Swing your arms naturally. Avoid carrying hand weights since they put extra stress on your elbows and shoulders. Don't overstride. Select a comfortable, natural step length. If you want to move faster, pull your back leg through more quickly.

- **Breathe deeply.** If you can't talk or catch your breath while walking, slow down. At first, forget about walking speed. Just get out there and walk!

Pick up the pace
- To warm up, walk at an easy tempo for the first several minutes. Then gradually adopt a more purposeful pace. A good way to add variety is to incorporate some brisk intervals. For example, walk one block fast, two blocks slow and repeat several times. Gradually add more fast intervals with shorter recovery periods. Concentrate on increasing your speed while maintaining good posture.
- Walking hills is a great way to tone your legs. Using Nordic walking poles can help your burn more calories and give you better posture and overall muscle endurance. Treadmill walking, while not as scenic, can be convenient during bad weather.
- The end of your walk is an ideal time to stretch since your body is warmed up. Stretch your hamstrings and calves as well as your chest, shoulders and back. Hold each stretch for 15 to 30 seconds.
- Track your progress. Although experts recommend walking at least 30 minutes a day, there are no hard and fast rules. Walking 60 minutes/day and brisk intervals will help you burn more calories. Fit walking into your schedule whenever you can. That may mean three 10-minute walks over the course of a day. The best schedule is one that keeps you walking and keeps you fit!

American Heart Association. (2014). Walking 101. http://www.heart.org/HEARTORG/HealthyLiving/PhysicalActivity/Walking/Walking-101_UCM_461766_Article.jsp#.WRfdcMkr_IU

Finding Pleasure

Try to do at least one thing every day that you enjoy, even if you only do it for 15 minutes.
- Start an art project (oil paint, sketch, create a scrap book or finger paint with grandchildren).
- Take up a hobby, new or old.
- Read a favorite book, short story, magazine or newspaper.
- Have coffee or a meal with friends.
- Play golf, tennis, ping-pong or bowl.
- Sew, knit or crochet.
- Listen to music during or after you practice relaxation.
- Take a nature walk — listen to the birds, identify trees and flowers.
- Watch an old movie on TV or rent a video.
- Take a class at your local college.
- Play cards or board games with family and friends.

Daily Relaxation

- Relaxation is more than sitting in your favorite chair watching TV. To relieve stress, relaxation should calm the tension in your mind and body. Some good forms of relaxation are yoga, tai chi (a series of slow, graceful movements) and meditation.

- Like most skills, relaxation takes practice. Many people join a class to learn and practice relaxation skills.

- Deep breathing is a form of relaxation you can learn and practice at home using the following steps. It's a good skill to practice as you start or end your day. With daily practice, you will soon be able to use this skill whenever you feel stress.
    1. Sit in a comfortable position with your feet on the floor and your hands in your lap or lie down. Close your eyes.
    2. Picture yourself in a peaceful place. Perhaps you're lying on the beach, walking in the mountains or floating in the clouds. Hold this scene in your mind.
    3. Inhale and exhale. Focus on breathing slowly and deeply.
    4. Continue to breathe slowly for 10 minutes or more.
    5. Try to take at least five to 10 minutes every day for deep breathing or another form of relaxation.

American Heart Association. (2014). Retrieved from http://www.heart.org/HEARTORG/HealthyLiving/StressManagement/FourWaystoDealWithStress/Four-Ways-to-Deal-with-Stress_UCM_307996_Article.jsp#.Wqqqqqq_BU