

Depression in Women with Heart Disease

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Kimberly M. Ashcraft

Marshall University

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Advisor *Judith P. Sortet*
Judith P. Sortet, EdD, RN
Chair, Thesis Committee

College of Nursing and Health Professions

Leonard J. Deutsch
Leonard J. Deutsch, PhD
Dean of the Graduate College

Kimberly M. Ashcraft, MS, RN, Clinical Nurse IV, Cardiac Rehabilitation
Department, Charleston Area Medical Center (CAMC), Charleston, WV (now with
Surgical/Vascular Intensive Care Unit, CAMC).

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Abstract

The purpose of this study was to examine the relationship between anxiety and anger with depression in women with heart disease. A sample of 50 women participating in cardiac rehabilitation programs in Charleston, WV and Huntington, WV was used to evaluate the inter-relationship of suppressed, expressed, state and trait anger, state and trait anxiety and depression. This non-experimental, descriptive designed study was evaluated by using multiple linear regression and regression coefficients analyzed for the anger and anxiety scores and their interaction. Depression was measured by the Beck Depression Inventory II (BDI-II). Anxiety and anger were measured by Spielberger's State-Trait Anxiety Inventory (STAI), and State-Trait Anger Expression Scale (STAXI). The study tested two hypotheses. The first hypothesis stated that there would be a significant positive correlation between suppressed anger scores and depression scores. The second hypothesis stated that there would be a significant positive correlation between trait anxiety scores and depression scores. Of the two original hypotheses, suppressed anger scores significantly positively correlated with depression scores. Instead, of trait anxiety, state anxiety scores significantly positively correlated with depression scores. The significant positive relationship of state anxiety scores and suppressed anger scores with depression scores supports earlier results by Frasure-Smith, et al. 1995 and suggests that suppressed anger as a correlate to depression is an emotion which needs attention in women with heart disease.

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Depression in Women with Heart Disease

Introduction

Research evidence increasingly suggests a link between psychosocial factors and coronary artery disease (CAD) (Frasure-Smith, 1995). The psychosocial factors most often cited are negative emotions including anger/hostility, anxiety, depression, and lack of social support. Unfortunately, the majority of research findings in this area has used only male subjects and thus much is still unknown about the CAD-psychosocial factor relationship in women.

Background

Some studies have shown a few intriguing results relative to this relationship. Psychosocial factors have been linked to poor outcomes following myocardial infarction (MI) in women (Frasure-Smith, Lesperance, & Talajic, 1995a). Major depression has been found to commonly occur with MI and noted to positively correlate with high mortality within 12 months following MI (Lesperance, Frasure-Smith, & Talajic, 1996). Both genders exhibit depression in association with CAD (Frasure-Smith, Lesperance, & Talajic, 1993). However, women are twice as likely to be depressed as men (Hallstrom, Lapidus, Bengtsson, & Edstrom, 1986).

With regard to another negative state, Adams (1994) reported a negative correlation between hostility and general health at age 52 for 105 women who attended Mills College for Women. Powell and colleagues (1993), noted more withdrawn characteristics including slowness, and low level of alertness. One

hypothesis by Powell, et al., (1993) suggested that women with CAD experienced social isolation, depression, and suppressed emotions. Frasure-Smith et al., (1993) discussed the correlation of depressive symptoms to comorbidity after MI. Her research suggested that a clinical diagnosis of major depression is not necessary to predict negative cardiac outcomes in either gender. Frasure-Smith et al., (1995a) reported significant predictive value of depressive symptoms and anxiety with negative cardiac events post MI. This research also noted a positive correlation among suppressed anger, anxiety, and depressive symptoms.

Problem Statement

More research is needed to understand the psychosocial factors of CAD among women. Powell et al., (1993) suggested that the psychosocial profile of CAD for women is different from the stereotypical aggressive/hostile profile identified for men. A relationship between suppressed emotions and depression is suggested by both Powell et al., (1993) and Frasure-Smith et al., (1995b). Therefore, the purpose of this study was to assess the relationship between anxiety and suppressed anger with symptoms of depression in women with CAD.

Significance of the Problem

Psychosocial factors can be changed. Understanding the psychosocial factors for women with CAD can aid a holistic treatment plan. Psychological assessment tools can be used and appropriate interventions can be implemented

as part of a comprehensive plan of care. Family nurse practitioners can be instrumental in identifying and implementing strategies to encourage changes in psychosocial factors that predict risk for CAD and co-morbidity post cardiac event.

Theoretical Framework

The framework most applicable to this study is the Rational-Emotive Theory (RET) described by Albert Ellis (1962) (Appendix A). Ellis believed that psychological disturbances resulted from irrational beliefs and ideas. The basic framework is expressed in his "A-B-C" model of the relationship between cognition and emotion. "A" represents an activating event or situation, "B" represents the private belief, idea, or statements about the event or situation, and "C" represents the emotional consequences that are experienced. Assumptions made about the event or situation are private and often silent or subconscious. Often these beliefs or statements are framed in an absolute or imperative term, such as an "all-or-nothing" framework. Frequently, individuals are aware of the emotion(s), but unable to attend to the cognitive beliefs or ideas that mediates or determines the emotion(s).

Depression is more than feeling blue or sad. It quite possibly represents a variety of negative emotions, such as anger and anxiety. Some researchers have even referred to depression as the "final common pathway" for negative emotions. Frasure-Smith et al., (1995b) questioned whether depression, anxiety, loneliness, and anger might be overlapping indices of psychological status. Using

Ellis' framework, depression would represent a complex emotional consequence "C" of the situation or event "A" CAD. The private ideas, beliefs, or statements "B" mediating the emotional response would possibly be unconscious or lack conscious attention by the individual experiencing depression. By identifying the emotional indices "C" associated with depression, such as suppressed anger and anxiety, Ellis' "A-B-C" model could then be used to discern the private beliefs, ideas, or statements "B" which can then be treated using cognitive therapy. Family nurse practitioners can identify emotional indices and severity of the emotional experience for an individual. With training, family nurse practitioners can employ simple cognitive therapies such as assertiveness training and thought stopping techniques with clients prior to or in the absence of a psychological referral. Family nurse practitioners can also seek appropriate psychological referral.

Once an emotion is identified and recognized by an individual, cognitive beliefs or statements can be discerned. Ellis (1962) believes that therapy can teach clients to identify and change irrational or illogical notions that underlie distressing symptoms. He is a proponent of rational-emotive therapy as a different cognitive-behavioral approach. Other cognitive-behavioral techniques, like rational role reversal, have been used in combination with Ellis's RET technique to treat depression and trait anxiety (Kendall & Bemis, 1986). Therefore, Ellis' "A-B-C" model of RET can be used to evaluate depression as a

complex emotional consequence experienced by an individual and suggest a mode of therapy to relieve distress by identifying and helping the individual attend to the unconscious thoughts leading to the emotion experienced.

Hypotheses

Frasure-Smith et al. (1995b) identified a positive correlation between negative emotions with negative cardiac events post MI. Her research also showed a significant relationship between negative events and depressive symptom clusters without the additional objective criteria for a clinical diagnosis of depression. Women appear to have a greater tendency to express depression and anxiety than their male counterparts (Kessler et al., 1994). Hallstrom et al. (1986) found that depressed women were five times more likely to develop angina over a 12-year interval than non-depressed women.

This study evaluated the relationships between suppressed anger and anxiety with depression in women with heart disease. This study tested two hypotheses. The first hypothesis stated that there would be a significant positive correlation between suppressed anger scores and depression scores. The second hypothesis stated that there would be a significant positive correlation between trait anxiety scores and depression scores. This study also evaluated demographic variables, such as age and race, and psychosocial variables, such as education level and time since cardiac event, for positive or negative correlations with depression scores. Variables found to have a significant

correlation with depression scores or each other were entered into the multiple regression model for final analysis.

Operational Definitions

Frasure-Smith et al. (1993) recognized depressive symptom clusters, without the diagnostic time frame and functional limitations, as corresponding positively to increased mortality post MI. Depression can be clinically significant for future events even without meeting the criteria for a diagnosis of major depression. Depression in women was measured by a self-administered questionnaire that evaluates fatigue, feelings of dejection, sadness, guilt, insomnia or hypersomnia and loss of effectiveness or productivity. For this study, a diagnosis of major clinical depression was not necessary.

Anger as an emotional experience may be recognized, unrecognized, expressed, or suppressed. Anger can range from mild annoyance to full rage (Riley et al., 1989). Anger in women was measured by a self administered questionnaire which evaluates state and trait anger and the anger experience as either suppressed ("anger-in") or expressed ("anger-out").

Anxiety states include a feeling of tension and nervousness. Frequently, loss of sleep, fatigue, weakness, memory loss, inattention, "palpitations", and confusion accompany the anxiety state (Ganguli, 1986). Anxiety was measured by a self-administered questionnaire that evaluates the state of anxiety and traits often associated with anxiety.

Literature Review

The role of depression and negative emotions as a risk factor for mortality and morbidity post MI in men and women is increasingly more clear (Frasure-Smith et al., 1995b and Lesperance et al., 1996). Lesperance et al.,(1996) examined the relationships among previous depression, hospital depression, and depression experienced during the year post-MI. His non-experimental, descriptive design examined participants of another MI study being conducted at the Montreal Heart Institute. Women comprised 22% (49) of the 222 sample population. Baseline interviews were conducted with each participant approximately 1 week after admission for MI. The interviews included a modified version of the National Institutes of Mental Health Diagnostic Interview Schedule (DIS) for measuring current and lifetime diagnoses of major depression, the 21-item, self-administered Beck Depression Inventory (BDI), and questions about social and demographic characteristics. Home interviews were completed at 6 months and 12 months after MI. Participants or family members were contacted by telephone at 18 months to determine survival status.

Data were analyzed by using a software package SPSS for Windows (Lesperance et al., 1996). The chi-square statistic was used to assess logistic regression models of the impact of depression in-hospital to 6,12, and 18 month mortality. The chi-square statistic was also used to compare the characteristics of the various groups of interest and their differences. P-value limits were set at <.05 and <.01.

Survival status was obtained on all 222 participants in the study (Lesperance, et al., 1996). There were 12 deaths (5.4%) in the first 6 months, five additional deaths in the second 6 months, and four additional deaths in the final 6 months for a total of 21 deaths in 18 months (9.5%). Thirty-five (35) participants met the criteria for depression in-hospital. Six (6) of the participants meeting the criteria for depression in-hospital died over the first 6 months. Between 6 and 12 months, one additional in-hospital depressed participant died. Between 12 and 18 months, four additional in-hospital depressed participants died. The odds ratios (3.96, 95% CI, $p=.008$) were significant for the impact of major depression in the hospital on mortality with the most apparent impact during the first six months. Sixty-one (61) participants (27.5%) reported at least one episode of major depression prior to the current MI. Compared to those without a prior history of depression, participants with a history were more likely to be depressed in the hospital ($p=.026$) and more likely to be female ($p=.00055$). Of the 35 participants depressed in-hospital, seven died by 1 year, 15 experienced sustained or relapses of depression, and three were unavailable for follow-up. Therefore, only nine of the 35 participants survived and were depression-free at 18 months which is in sharp contrast to the 135 not depressed in-hospital ($p=.00001$).

In her research, Frasure-Smith et al., (1995b) examined the relative prognostic impact of major depression, depressive symptoms, history of major depression, anger in, anger out, and perceived social support in patients

assessed in the hospital after MI. Her research was a non-experimental descriptive design. Structured one hour baseline interviews were conducted about one week after admission for MI (range 5-15 days). The interviews included a modified version of the National Institutes of Mental Health Diagnostic Interview Schedule (DIS); the 21-item version of the Beck Depression Inventory (BDI); the state portion of Spielberger's State-Trait Anxiety Inventory (STAI); Spielberger's Anger Expression Scale (STAXI); and Blumenthal's Social Support Scale (BSSS). Questions also included medical history, smoking behavior, and social and demographic characteristics.

Frasure-Smith (1995a) studied recurrent cardiac events as the major outcome that included survived and non-survived re-infarctions, admissions for unstable angina, arrhythmic deaths, and survived cardiac arrests. Patients and family members were contacted 12 months after their MI to determine survival status. Data analysis was performed using SPSS for Windows and all tests were two-tailed. Multiple logistic regression analysis was used to assess the odds ratio and 95% confidence intervals. A likelihood ratio test was used to compare the models, allowing examination of the impact of psychological variable after controlling for cardiac variables. A contingency coefficient was calculated to examine the degree of overlap among the dichotomized psychological variables including the diagnosis of major depression and the history of major depression based the modified DIS.

Of the five continuous measures of negative emotions, all were significantly interrelated with p values of $< .05$ and $< .01$ except for anger-out. The highest correlation was between state anxiety (STAI) and the BDI (Beck Depression Inventory) (Frasure-Smith et al., 1995b). A two stepwise multiple logistic regression analysis was used to separately identify the most parsimonious groups of cardiac and psychological variables predicting cardiac events. The final model looking only at psychological variables was made up of BDI scores, anxiety, and history of depression. The impacts of depression symptoms, anxiety, and history of depression were largely independent of each other. The statistical significance for this model was $p=.0002$. The independence was further illustrated by the fact that the proportion of patients experiencing a cardiac event increased with the number of psychological risk factors from 14% among those with no risk factors to 17% among those with one risk factor, 43% with two risk factors, and 50% with all three risk factors.

Kessler et al., (1994) conducted a non-experimental, epidemiological study using the National Institutes of Mental Health Diagnostic Interview Schedule (DIS) to present estimates of lifetime and 12-month prevalence of 14 DSM-III-R psychiatric disorders from the National Comorbidity Survey in the United States. Major depression was evaluated as part of this national survey in both men and women with an equal representative national sample. Persons aged 15 to 54 in the noninstitutionalized civilian population in the 48 contiguous states were assessed. Students living in campus housing were also included.

The response rate was 82.6% (total of 8098). Forty-nine percent of the sample were women and 51% were male. The national was split into regions with representation from urban and rural local areas. Interviews were conducted by field staff in various regions with 158 interviewers. Three field quality control procedures were conducted to verify accuracy of data collection. Completed interviews were edited by 18 regional supervisors before they were returned to the national office; incomplete interviews were returned to the interviewer for completion of missing data; a random sample of respondents was recontacted by field supervisors to verify accuracy of data; and the field edits were checked at the national office for accuracy.

The data were analyzed for standard errors by using a Taylor series linearization method. Standard odds ratios were estimated by using a method of repeated measures using the logistic program on the SAS software (Kessler et al., 1994). Looking at major depression only, more than 17% of the respondents had a history of a major depressive episode (MDE) in their lifetime and more than 10% had an episode within the last 12 months of completing the survey. Women were more likely to have MDE and all anxiety disorders, both lifetime and during the previous 12 months, than men. The standard error for both men and women was 0.9 for lifetime and 0.8 for previous 12 months. Women also presented higher prevalence of both lifetime and 12 month comorbidity of three or more disorders than men.

Statistically, the prognosis for women was worse within the first 12 months post MI (AHA, 1996). Women tended to respond less favorably to post cardiac surgical procedures than men do. Often this disparity is related to the fact that women tend to exhibit CAD about 10 years later than men.

While a relationship between anger and hostility with CAD in the research exists with men, the role of hostility in women's health is less clear (Adams, 1994). Adams used a non-experimental design to study the relationships between hostility at ages 21, 27, 43, and 52 and general health at age 52 in a longitudinal sample of educated midlife women. The data were collected as part of the Mills Longitudinal Study conducted at Mills College which was a predominantly white, high-socioeconomic status (SES) all female school. About two-thirds of the Mills College senior classes of 1958 and 1960 participated in the study by mail when they were, on average, 27, 43, and 52 years of age. The participants completed the Minnesota Multiphasic Personality Inventory (MMPI) during the first two waves and the California Psychological Inventory (CPI) during all four waves of data collection. The women also provided extensive questionnaire material. Hostility was assessed at age 21 and 27 with the Cook-Medley Hostility Scale, a 50 item scale of MMPI items, and at all four ages using a CPI derived hostility scale.

Data were analyzed by computation of correlations between the interrelationships of the hostility measures across ages 21, 27, 43, and 52 and

the correlations between hostility at each of the ages and health at age 52 (Adams, 1994).

Hostility at ages 21, 27, 43, and 52 consistently, inversely predicted women's general health at age 52 with p values of $<.05$ and $<.01$ (Adams, 1994). Although in the expected direction, the association between hostility at ages 21, 27, and 43 and health at age 43 was not significant. This finding is possibly due to the insufficient change in health by age 43 for this healthy, female population. Among health practices at age 43, cigarette smoking was predicted by hostility, but only at ages 21 and 27. Possibly hostility was associated with the initiation of smoking. Health practices of smoking, alcohol intake, and body mass index (BMI) did not mediate the relationship between hostility at any age and general health at age 52. This may be due to the advantaged SES of the sample. The largest limitation to this study was the lack of generalizability due to the mostly upper middle income, well adjusted, above average in health, Mills College women studied longitudinally. However, it does link anger and hostility to health outcomes in women.

Suppression of anger and hostility as a theoretical link to depression is acknowledged in the literature. Riley et al., (1989) cited general support of the hypothesis that depression is related to suppression of anger. The purpose of his experimentally designed study was to examine the relationship between anger/hostility and depression using multiple measures of hostility, anger experience, and anger expression/suppression. He also studied the comparison

of the levels of the various anger dimensions not only between clinically depressed and normal samples, but also between clinically depressed and a sample of post-traumatic stress disorder (PTSD) patients who have been shown to have anger control difficulties with high levels of hostility and inappropriate anger expression.

In the Riley et al. (1989) study, three groups were evaluated which consisted of patients admitted to a psychiatric unit of a teaching hospital during a 9-month period for cognitive therapy for depression, all patients admitted to a Veterans Administration psychiatric PTSD hospital unit during a 9-month period, and a control group of 120 parents of children in one of two public elementary schools. The tools used for the study were the Multidimensional Anger Inventory, the Framingham Anger Scales, the Buss Durkee Reactive and Neurotic Hostility Scales, the Anger Self-Report-General Expression, and State-Trait Anger Scale/T-Anger. The sample of patients admitted for depression and PTSD also answered a BDI and the MMPI as part of their inpatient psychiatric evaluation.

The data were analyzed by using Pearson's correlation for age and t-test for gender and race. A multivariate analysis of variance (MANOVA) was computed for the 12 anger scales across the three groups. With p values $<.05$, the Framingham Anger In (FI) scale, as a measure of anger suppression, showed significant differences between the depressed group and both the normal and the PTSD groups. The depressed group showed significant positive correlations between the depression measures and the anger experience/hostility

measures (Riley et al., 1989). The FI scale was positively associated with the BDI in the depressed group with a p value of $<.05$, but not with the MMPI-D scale. Mostly anger suppression, rather than repression, is measured since the subject must be aware of the anger experience to self report. Also the intensity of the anger experience, as well as differing situations or previous learning may influence the ability of the subject to suppress or express anger.

Frasure-Smith et al., (1995a) noted a relationship of state anxiety, suppressed anger, and depression with subsequent cardiac events post MI. Her research also suggested that women's greater tendency to express depression and anxiety may place them at increased risk of mortality or morbidity post MI. Unfortunately, this research was limited by the small sample size of women (49) compared to men (173).

In summary, a question still exists as to whether anger, hostility, anxiety, and depression are separate negative emotional states or whether some are components of one which chronically affects an individual over time and can contribute to chronic disease states such as CAD. Although previous research was inconclusive, recent findings by Frasure-Smith et al. (1995a) suggested a correlation among anxiety, suppressed anger, and depression. Because women as a gender group are sparsely represented in research studies, specific research directed toward the unique experiences of women in the area of depression is needed.

Methodology

Design

This study used a non-experimental, descriptive design. The study observed and described the relationship between anger expression, state and trait anxiety, and depression in women with heart disease.

Setting and Sample

Women with heart disease, whether post coronary artery bypass graft surgery (CABG), stable angina, post percutaneous coronary angioplasty (PTCA), valvular disease, left ventricular dysfunction, or post (MI) participating in the Cardiac Rehabilitation Program at Charleston Area Medical Center (CAMC) in Charleston, WV and St. Mary's Hospital in Huntington, WV, were approached for consent to participate in the study. Women currently being managed on anti-anxiety or anti-depressive drugs were excluded from the study. Women agreeing to complete the necessary forms received a verbal explanation and a copy of the survey forms to complete. Volunteers understood verbally and in writing that their participation was voluntary, that they might decide at anytime to refrain from participation, and that all information gathered during the study is kept confidential. A sample size of 50 women was obtained.

Instruments

Depression was measured by the Beck Depression Inventory-II (BDI-II) (Appendix B). The BDI-II is a 21 item self-report inventory that rates items on a 4-point scale between 0 and 3. Higher scores reflect more depression. Scores are totaled and evaluated on a range of total scores. The average individual will

often score a 5 on the BDI. A total score of 16 or higher is considered significant for major depression. Scores between 10-15 indicate depressive symptoms. Scores less than 10 are considered normal. Frasure-Smith et al. (1995a) indicated that scores of 10-15 were associated with untoward events post-MI. Gotlib and Cane (1989) found the BDI to be the preferred self-report measure for the intensity of depressive symptoms. Dahlstrom, Brooks, and Peterson (1990) performed correlation of the BDI with the Minnesota Multiphasic Personality Depression Inventory (MMPI-D) with college undergraduate women. The results showed a strong correlation of the BDI-II as a measure of depression ($p < .001$) with an alpha score of 0.65. BDI-II scores have been found to predict cardiac morbidity post-MI in patients with significant dysrhythmias (Ahern et al., 1990). For the purposes of this study, a diagnosis of major depressive episode was not necessary.

Spielberger's State-Trait Anxiety Inventory (STAI) (Appendix C) was used to assess anxiety. The STAI is a 40 item self-report inventory that evaluates the state of the emotion of anxiety and also the traits observed as anxiety. Items are scored on a 4-point scale ranging from one (not at all or almost never) to four (very much so or almost always). Scores are totaled for each subscale of 20 items. Scores in the upper 50th percentile for each subscale indicates higher levels of anxiety. Scores between the 25th and 50th percentile indicate low to moderate levels of anxiety. Scores below the 25th percentile are considered in normal range. Reliability data for the STAI (Spielberger, 1983) are reasonably

high for college students, middle aged, and older, working adults with coefficients ranging from 0.65 to 0.75. In correlation studies with the anger expression scales Spielberger et al., (1985) found a highly significant relationship between suppressed anger and state and trait anxiety in college students. This correlation suggests that students who tended to suppress their anger were more likely to experience anxiety and were more anxious in the testing situation.

Anger experience and expression will be assessed by Spielberger's State-Trait Anger Expression Scale (STAXI) (Appendix D). The STAXI is a self-report inventory of 44 items which forms six scales and two subscales. State/trait anger is a 20 item scale measuring differences in the anger experience and disposition to anger. The anger expression (AX) portion of the scale (24 items) has subscales to measure anger-in (the tendency to avoid expressing anger even when appropriate; suppressed anger) and anger-out (the tendency to express anger by directing it outward toward other people or objects). Total scores are determined for each of the six scales and compared to identified norms. Scores falling in the 75th percentile or higher indicate individuals experiencing anger to a degree that may interfere with optimal functioning. Scores falling in the 50th to 75th percentile reflect high anger states. Scores falling in the 25th to 50th percentile reflect a moderate state of anger and scores below the 25th percentile reflect a low anger state. State/trait anger was correlated with the Buss-Durkee Hostility Inventory and the Cook-Medley Hostility scale showing strong correlations across males and females ($p < .001$) The correlations and alpha

coefficients for the AX demonstrated that two relatively independent dimensions of anger expression are being assessed (Spielberger, 1988).

Responses to the STAI, STAXI, and BDI-II instruments were recorded on machine scannable versions generated from Cardiff Teleform Software. The Teleformed versions had the capability to be electronically scanned into a computer database with minimal human keying. The machine read instruments minimized human error and reduced error variance.

Procedures

Before beginning data collection, permission from the Institutional Review Board at Marshall University, St. Mary's Hospital, and West Virginia University/Charleston Area Medical Center was obtained (Appendix E). Females participating in a cardiac rehabilitation program from June of 1998 until June of 1999 were asked to participate.

Demographics included in the study were age and race. Each participant was also assessed for psychosocial variables such as tobacco, caffeine, and alcohol use, current medications, social support, and time since cardiac event.

Demographic and psychosocial information was recorded on a data collection sheet (Appendix F) completed by either the researcher or rehabilitation staff.

Each participant completed a consent to participate in the study (Appendix G) specific for each participating institution. The study parameters were explained and each woman needed to complete three surveys, the BDI, STAI and STAXI,

in order to participate in the study. The specific staff assisting with the study were instructed on the necessary procedures by the researcher.

Analyses of Data

Fifty women were enrolled in this study and given a battery of psychological instruments that assessed depression, anxiety, and anger through scale and subscale scores. Ten women were excluded from the study due to missing information or outlier data points. Thus, the analysis was performed on 40 women.

Univariate analysis was performed on the scales included in the study. The initial run of the data revealed some concerns related to dispersion in the dependent variable, depression, as assessed by the BDI. The distribution of BDI scores was highly positively skewed and had a number of outliers, which violates the assumption of normality. The outliers were removed, and the univariate analysis for the BDI indicated a fairly normal distribution. Predictor variables were appropriately normally distributed.

A correlation matrix was generated on the dependent and independent variables. The correlation matrix provided simple descriptive statistics for each variable, and the Pearson coefficient, as well as the p values for the correlation between each variable comparison. The results from the matrix helped to identify variables that were associated, and hence, to be a factor for including them into the model for the multivariate analysis. The independent variables (predictors) having significant, or close to significant, associations with the dependent

variable were the State Anxiety, Trait Anxiety, Anger-In, Anger-Out, and patient age. The Anger-Out variable was included because of its significant correlation with the patient's age, which in itself, was significantly correlated with BDI scores. These six variable were then used in the model for multiple regression analysis.

For the multivariate analysis, a stepwise multiple regression was used to identify a model that would be significantly associated with scores from the dependent variable. The stepwise regression approach performed a series of analysis in which the original model is analyzed to identify how each variable is associated with the dependent variable. The regression then selected out the variable that accounts for the highest amount of variance, and carried over the remaining variables to the next comparison. At each step, the regression analysis performed the same task, until no more significant variables were left. All of the variables that were significant were entered into the regression model, and the analysis was conducted using a stepwise built model. The entire model was tested for goodness of fit against probabilities less than or equal to 0.05 ($p \leq 0.05$) and the estimated R-square statistic.

Results

Table 1 Race Demographics

Race	Frequency	Percent
Caucasian	38	95.00
Other	2	5.00

Table 2 Marital Status

Marital Status	Frequency	Percent
Single	2	5.00
Married	19	47.50
Widowed	13	32.50
Divorced	6	15.00

Table 3 Education Level

Education	Frequency	Percent
8th Grade or less	20	50.00
High School	7	17.50
College/Graduate School	13	32.50

Table 4 Time Since Event

Time Since Event	Frequency	Percent
< 3 months	9	22.50
3 to 12 months	12	30.00
13 to 24 months	7	17.50
> 24 months	12	30.00

Demographics

Table 1 shows the sample race demographics. The study consisted of predominately white females 98% Caucasian and 2% African-American with a mean age of 68. The age range was 48 - 83. Table 2 shows the marital status for the sample demographics. Forty-seven and a half percent (47.5%) were married, 32.5% were widowed, 15% were divorced, and 5% were single.

Table 3 shows the sample educational level. The educational level varied from less than a high school education to a doctoral degree. The percentages were 50% with an eight grade education or less, 17.5% with a high school diploma or equivalent, and 13% with college or graduate school education. Thirty-seven and a half percent (37.5%) of this group of women lived alone.

Table 4 shows time since event for the sample. Time since event was calculated for this sample of women. Fifty-two and a half percent (52.5%) were a year or less from their cardiac event or diagnosis with 47.5% greater than a year from their event or diagnosis. Time since event did not account for any correlation with depression as assessed by the BDI-II.

Table 5 Depression, Anxiety, Anger and Demographic
Mean Scores and Standard Deviation

Variable	Mean	SD
BDI	6.05	3.52
STAIT	30.33	9.67
TRAIT	30.13	8.49
AGE	68.45	9.21
S ANG	10.35	1.14
T ANG T	5.05	1.48
T ANG R	6.18	2.06
T ANG	13.58	3.01
AX IN	12.88	3.08
AX OUT	11.70	2.43
AX CON	25.70	5.28
AX EX	14.88	6.80
TIME	16.04	14.66

N = 40

Table 5 shows the mean and standard deviation of the test scores, age, and time since event. The mean BDI-II score was 6 with a standard deviation of 3.5. In separate data collected on men and women entering the CAMC Cardiac Rehabilitation Department, the mean entry BDI-II score was 7.8 improving to a mean exit score of 6.5 in 3 months. The mean BDI-II score of this group of women is slightly lower, but consistent with the level of depression seen in CAMC Cardiac Rehabilitation. The lowered effect is probably due to sample number variations.

Table 6 Depression, Anxiety, Anger, and Demographic
Pearson Correlation Coefficients

	BDI	State	Trait	Age	T_Ang	AX_In	AX_Out	Time
BDI	1	0.5066	0.2592	0.3326	0.0699	0.5	0.0468	-0.1018
	p=---	p=.001	p=.106	p=.036	p=.668	p=.001	p=.774	p=.532
State	0.5066	1	0.5689	0.2177	0.1044	0.3112	-0.1027	0.0148
	p=.001	p=---	p=.000	p=.177	p=.522	p=.051	p=.528	p=.928
Trait	0.2592	0.5689	1	0.2028	0.1736	0.417	-0.1497	-0.2401
	p=.106	p=.000	p=---	p=.209	p=.284	p=.007	p=.357	p=.136
Age	0.3326	0.2177	0.2028	1	-0.1214	0.2721	-0.3248	0.0985
	p=.036	p=.177	p=.209	p=---	p=.456	p=.089	p=.041	p=.545
T_Ang	0.0699	0.1044	0.1736	-0.1214	1	0.24	0.448	0.0163
	p=.668	p=.522	p=.284	p=.456	p=---	p=.136	p=.004	p=.920
AX_In	0.5	0.3112	0.417	0.2721	0.24	1	-0.1284	-0.23
	p=.001	p=.051	p=.007	p=.089	p=.136	p=---	p=.430	p=.153
AX_Out	0.0468	-0.1027	-0.1497	-0.3248	0.448	-0.1284	1	0.1212
	p=.774	p=.528	p=.357	p=.041	p=.004	p=.430	p=---	p=.456
Time	-0.1018	0.0148	-0.2401	0.0985	0.0163	-0.23	0.1212	1
	p=.532	p=.928	p=.136	p=.545	p=.920	p=.153	p=.456	p=---

Table 6 is the Pearson Correlation Coefficients. State and trait anxiety, anger-in, and age showed positive correlations with depression based on the Pearson Correlation Coefficients. Anger-out demonstrated an inverse correlation with age and was entered into the stepwise multiple regression model.

The results of the multivariate analysis by stepwise multiple regression found that the state anxiety (Appendix H) and the anger-in (Appendix I) variables were significant factors associated with the BDI-II. Using these variables in the analysis, the regression model had an R2 value of .39. This value represents the proportion of how much variance in this dependent variable is accounted for by the model selected. Therefore, you could say that 39% of the depression scores can be accounted for by the state anxiety score and the anger-in score. The level

of the R2 is a low moderate value. State anxiety had a p value of 0.0009 and anger-in had a p value of .0081.

As a result, the first original hypothesis that suppressed anger scores would significantly positively correlate with depression scores was supported $p= 0.001$ because the anger-in scale offered significant association with the BDI results. However, the strongest association combines the anger-in scale with the state anxiety score, instead of the trait anxiety score. Therefore, the second hypothesis that trait anxiety scores would show a positively significant correlation with depression scores was not supported $p= 0.106$. An individual's proneness to anxiety (trait) was not as significant a factor as the individual's perceived emotions of anxiety (state). It is noteworthy that these women, some of whom were >24 months after cardiac diagnosis or cardiac event, still perceived emotions of anxiety such as nervousness, tension, worry, and/or apprehension.

Summary and Conclusions

Discussion

The state of anxiety and suppression of anger as significant factors associated with the depression supports the work reported earlier by Frasure-Smith et al.(1995a&b) and Lesperance et al.(1996). Frasure-Smith (1995a) had 49 women in her sample. This study evaluated a sample of 40 out of 50 women. Although a larger number of subjects included would have helped increase the strength of the model, the combined experience with Frasure-Smith suggested that women experience and express emotions after a cardiac event which are displayed most often as depression.

Time since event had no effect on the model. Interestingly, close to half of this study population was greater than a year post event or diagnosis. Yet state anxiety was the strongest significant factor associated with depression. State anxiety describing the emotions of tension and/or nervousness indicates that women continue to experience anxiety for a long period of time after the cardiac event or diagnosis. It suggests that factors other than the cardiac event itself contribute to state anxiety in women. Factors such as family or spouse expectations, caretaking expectations, lifestyle changes, living alone, and suppression of anger over time may contribute to state anxiety long after the immediate event has passed.

Anger suppression is often a learned and unconscious process. With a mean age of 68, a range of 48 to 83, and a negative relationship between anger-out and age, suggests a possible generational or cultural association with suppressed anger. Often, society accepts outward expression of anger in men, but supports women's expressions of sadness and depression (Riley et. al., 1989).

Expression of anger has two components as measured by the STAXI, outward and inward. A model can be described based on Ellis' theoretical framework with the cardiac event (A) initiating a discomforting sequence of thought processes that culminate in blame. The individual then blames either themselves or someone and/or something else for their discomfort. The emotion generated is either anxiety (blames self) or anger (blames others). If the anger is suppressed, anxiety is enhanced and the outward emotion expressed is depression (Appendix A). Expressed anger could be described as hostility. The individual chooses to suppress or express the anger probably based on societal or environmental norms or expectations and habitual, unconscious learned behavior.

In conclusion, this study helped to identify depression as a complex emotion consisting of suppressed anger and state anxiety. Addressing depression in women would need to include therapies directed toward suppression of anger and factors contributing to anxiety.

Limitations

The major limitation of this study was the low sample size. The low numbers of women entering cardiac rehabilitation programs across the country contributes to the challenges of obtaining a large sample size of women for study.

A second limitation of the study was volunteerism. The STAXI as a tool requires the participant to be cognitive of their emotional expressions of anger. Several women refused to participate in the study after reading through the questionnaires. These same women were unhappy with the STAXI questions that would indicate either unrecognized anger or an unwillingness to reveal the expression of anger. Therefore, the women studied volunteered to complete the surveys and may not represent the total population of women with heart disease in cardiac rehabilitation programs. Several women refused to complete the social security number information on the form. Assigning study numbers will avoid this difficulty in the future.

Implications for Nursing

Family nurse practitioners can benefit from the knowledge that women with heart disease often suppress anger and that they have a sense of anxiety which, combined, can lead to a display of depression. Often nurse practitioners will note anxiety and depression as emotions. It is important for to evaluate anger as part of the emotional experience for women.

Often, the most important education family nurse practitioners can provide is to support women diagnosed with heart disease with the appropriate expression of anger when anger is recognized. This type of education may

include assertiveness training or role playing, as well as giving the woman a safe, supportive environment to verbally explore emotions such as anger without judgement or consequences. Teaching women with heart disease that anger is a healthy emotion that often results in the energy needed to perform certain functions can help in the recognition and expression process. Women diagnosed with heart disease can benefit from learning re-directing techniques for anger such as exercise, housework, hobbies, etc.. Identifying hobbies or activities neglected due to depression, helping to identify and express anger, and then providing support in re-directing energy into activities, which give pleasure, could assist in the rehabilitative process of women with heart disease.

Recommendations

Repeating this study to evaluate suppressed anger and state anxiety with depression in a larger group of women would help to increase the validity of these results. Expanding the evaluation to before and after a cardiac rehabilitation program would give an indication of whether specific therapies are needed as part of a comprehensive cardiac rehabilitation program. Doing this study with equal numbers of men and women could evaluate whether there is a gender difference to the experience of depression and the expression of anger. Women with heart disease represent a low percentage of Cardiac Rehabilitation participants. Possibly, Cardiac Rehabilitation programs need to evaluate program structures to better meet the needs of women with heart disease.

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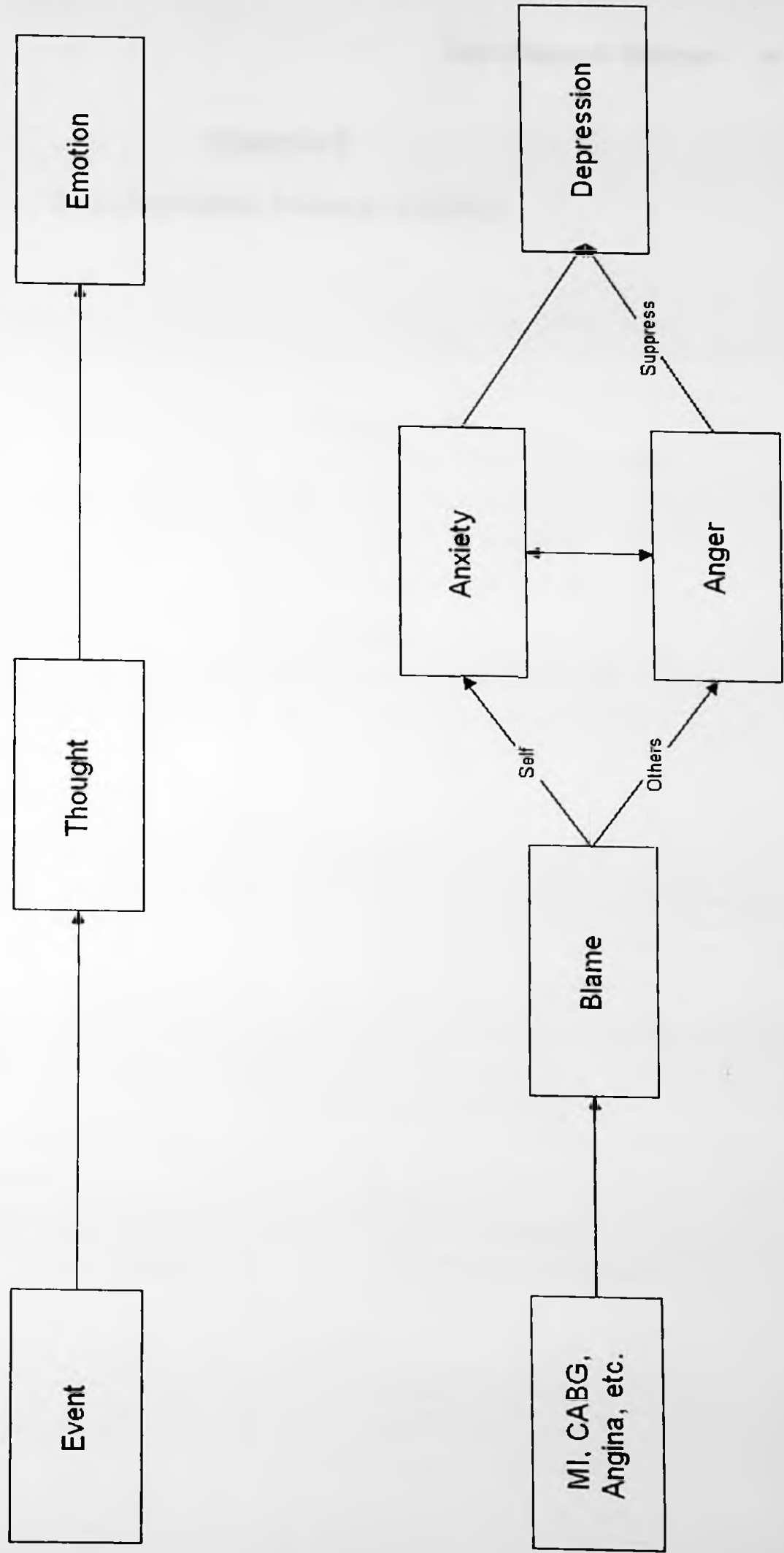
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Appendix A
Anger/Anxiety Theoretical Model

Theoretical Model with Anger/Anxiety Example



Theoretical Model with Anger/Anxiety Example



Appendix B

Beck Depression Inventory II (BDI-II)

Item	1	2	3	4	5
1. I am sad most of the time	0	1	2	3	4
2. I have lost interest in my usual activities	0	1	2	3	4
3. I have trouble concentrating	0	1	2	3	4
4. I have trouble sleeping	0	1	2	3	4
5. I have lost my appetite	0	1	2	3	4
6. I feel hopeless	0	1	2	3	4
7. I feel worthless	0	1	2	3	4
8. I think about death or suicide	0	1	2	3	4
9. I have lost energy	0	1	2	3	4
10. I feel tired or fatigued	0	1	2	3	4
11. I feel nervous or jittery	0	1	2	3	4
12. I have trouble making decisions	0	1	2	3	4
13. I feel guilty	0	1	2	3	4
14. I feel angry or irritable	0	1	2	3	4
15. I feel lonely	0	1	2	3	4
16. I have trouble remembering things	0	1	2	3	4
17. I have lost confidence in myself	0	1	2	3	4
18. I have lost confidence in others	0	1	2	3	4
19. I feel that I am a burden on others	0	1	2	3	4
20. I have lost interest in sex	0	1	2	3	4
21. I have lost interest in my appearance	0	1	2	3	4
22. I have lost interest in my family	0	1	2	3	4
23. I have lost interest in my friends	0	1	2	3	4
24. I have lost interest in my work	0	1	2	3	4
25. I have lost interest in my hobbies	0	1	2	3	4
26. I have lost interest in my pets	0	1	2	3	4
27. I have lost interest in my car	0	1	2	3	4
28. I have lost interest in my home	0	1	2	3	4
29. I have lost interest in my life	0	1	2	3	4
30. I have lost interest in my future	0	1	2	3	4
31. I have lost interest in my past	0	1	2	3	4
32. I have lost interest in my present	0	1	2	3	4
33. I have lost interest in my life	0	1	2	3	4
34. I have lost interest in my life	0	1	2	3	4
35. I have lost interest in my life	0	1	2	3	4
36. I have lost interest in my life	0	1	2	3	4
37. I have lost interest in my life	0	1	2	3	4
38. I have lost interest in my life	0	1	2	3	4
39. I have lost interest in my life	0	1	2	3	4
40. I have lost interest in my life	0	1	2	3	4

Social Security #:

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Instructions: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the one statement in each group that best describes the way you have been feeling during the past two weeks, including today. Fill in the circle beside the statement you have picked. If several statements in the group seem to apply equally well, mark the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

1. Sadness

- 0 I do not feel sad.
- 1 I feel sad much of the time.
- 2 I am sad all the time.
- 3 I am so sad or unhappy that I can't stand it.

2. Pessimism

- 0 I am not discouraged about my future.
- 1 I feel more discouraged about my future than I used to be.
- 2 I do not expect things to work out for me.
- 3 I feel my future is hopeless and will only get worse.

3. Past Failure

- 0 I do not feel like a failure.
- 1 I have failed more than I should have.
- 2 As I look back, I see a lot of failures.
- 3 I feel I am a total failure as a person.

4. Loss of Pleasure

- 0 I get as much pleasure as I ever did from the things I enjoy.
- 1 I don't enjoy things as much as I used to.
- 2 I get very little pleasure from the things I used to enjoy.
- 3 I can't get any pleasure from the things I used to enjoy.

5. Guilty Feelings

- 0 I don't feel particularly guilty.
- 1 I feel guilty over many things I have done or should have done.
- 2 I feel quite guilty most of the time.
- 3 I feel guilty all of the time.

6. Punishment Feelings

- 0 I don't feel I am being punished.
- 1 I feel I may be punished.
- 2 I expect to be punished.
- 3 I feel I am being punished.

7. Self-Dislike

- 0 I feel the same about myself as ever.
- 1 I have lost confidence in myself.
- 2 I am disappointed in myself.
- 3 I dislike myself.

8. Self-Criticalness

- 0 I don't criticize or blame myself more than usual.
- 1 I am more critical of myself than I used to be.
- 2 I criticize myself for all of my faults.
- 3 I blame myself for everything bad that happens.

9. Suicidal Thoughts or Wishes

- 0 I don't have any thoughts of killing myself.
- 1 I have thoughts of killing myself, but I would not carry them out.
- 2 I would like to kill myself.
- 3 I would kill myself if I had the chance.

10. Crying

- 0 I don't cry anymore than I used to.
- 1 I cry more than I used to.
- 2 I cry over every little thing.
- 3 I feel like crying, but I can't.

11. Agitation

- 0 I am no more restless or wound up than usual.
- 1 I feel more restless or wound up than usual.
- 2 I am so restless or agitated that it's hard to stay still.
- 3 I am so restless or agitated that I have to keep moving or doing something.

12. Loss of Interest

- 0 I have not lost interest in other people or activities.
- 1 I am less interested in other people or things than before.
- 2 I have lost most of my interest in other people or things.
- 3 It's hard to get interested in anything.

13. Indecisiveness

- 0 I make decisions about as well as ever.
- 1 I find it more difficult to make decisions than usual.
- 2 I have much greater difficulty in making decisions than I used to.
- 3 I have trouble making any decisions.

14. Worthlessness

- 0 I do not feel I am worthless.
- 1 I don't consider myself as worthwhile and useful as I used to.
- 2 I feel more worthless as compared to other people.
- 3 I feel utterly worthless.

15. Loss of Energy

- 0 I have as much energy as ever.
- 1 I have less energy than I used to have.
- 2 I don't have enough energy to do very much.
- 3 I don't have enough energy to do anything.

16. Changes in Sleeping Pattern

- 0 I have not experienced any change in my sleeping pattern.

-
- 1 I sleep somewhat more than usual.
I sleep somewhat less than usual.

-
- 2 I sleep a lot more than usual.
I sleep a lot less than usual.

-
- 3 I sleep most of the day.
I wake up 1-2 hours early and can't get back to sleep.

17. Irritability

- 0 I am no more irritable than usual.
- 1 I am more irritable than usual.
- 2 I am much more irritable than usual.
- 3 I am irritable all the time.

18. Changes in Appetite

- 0 I have not experienced any change in my appetite.

-
- 1 My appetite is somewhat less than usual.
My appetite is somewhat greater than usual.

-
- 2 My appetite is much less than before.
My appetite is much greater than usual.

-
- 3 I have no appetite at all.
I crave food all the time.

19. Concentration Difficulty

- 0 I can concentrate as well as ever.
- 1 I can't concentrate as well as usual.
- 2 It's hard to keep my mind on anything for very long.
- 3 I find I can't concentrate on anything.

20. Tiredness or Fatigue

- 0 I am no more tired or fatigued than usual.
- 1 I get more tired or fatigued more easily than usual.
- 2 I am too tired or fatigued to do a lot of the things I used to do.
- 3 I am too tired or fatigued to do most of the things I used to do.

21. Loss of Interest in Sex

- 0 I have not noticed any recent change in my interest in sex.
- 1 I am less interested in sex than I used to be.
- 2 I am much less interested in sex now.
- 3 I have lost interest in sex completely.

Appendix C

Spielberger's State-Trait Anxiety Inventory (STAI)

1. I get nervous easily

2. I am nervous about the future

3. I am nervous about my health

4. I am nervous about my appearance

5. I am nervous about my work

6. I am nervous about my family

7. I am nervous about my friends

8. I am nervous about my school

9. I am nervous about my life

10. I am nervous about my death

11. I am nervous about my future

12. I am nervous about my health

13. I am nervous about my appearance

14. I am nervous about my work

15. I am nervous about my family

16. I am nervous about my friends

17. I am nervous about my school

18. I am nervous about my life

19. I am nervous about my death

20. I am nervous about my future

21. I am nervous about my health

22. I am nervous about my appearance

23. I am nervous about my work

24. I am nervous about my family

25. I am nervous about my friends

26. I am nervous about my school

27. I am nervous about my life

28. I am nervous about my death

29. I am nervous about my future

30. I am nervous about my health

31. I am nervous about my appearance

32. I am nervous about my work

33. I am nervous about my family

34. I am nervous about my friends

35. I am nervous about my school

36. I am nervous about my life

37. I am nervous about my death

38. I am nervous about my future

39. I am nervous about my health

40. I am nervous about my appearance

41. I am nervous about my work

42. I am nervous about my family

43. I am nervous about my friends

44. I am nervous about my school

45. I am nervous about my life

46. I am nervous about my death

47. I am nervous about my future

48. I am nervous about my health

49. I am nervous about my appearance

50. I am nervous about my work

51. I am nervous about my family

52. I am nervous about my friends

53. I am nervous about my school

54. I am nervous about my life

55. I am nervous about my death

56. I am nervous about my future

57. I am nervous about my health

58. I am nervous about my appearance

59. I am nervous about my work

60. I am nervous about my family

61. I am nervous about my friends

62. I am nervous about my school

63. I am nervous about my life

64. I am nervous about my death

65. I am nervous about my future

66. I am nervous about my health

67. I am nervous about my appearance

68. I am nervous about my work

69. I am nervous about my family

70. I am nervous about my friends

71. I am nervous about my school

72. I am nervous about my life

73. I am nervous about my death

74. I am nervous about my future

75. I am nervous about my health

76. I am nervous about my appearance

77. I am nervous about my work

78. I am nervous about my family

79. I am nervous about my friends

80. I am nervous about my school

81. I am nervous about my life

82. I am nervous about my death

83. I am nervous about my future

84. I am nervous about my health

85. I am nervous about my appearance

86. I am nervous about my work

87. I am nervous about my family

88. I am nervous about my friends

89. I am nervous about my school

90. I am nervous about my life

91. I am nervous about my death

92. I am nervous about my future

93. I am nervous about my health

94. I am nervous about my appearance

95. I am nervous about my work

96. I am nervous about my family

97. I am nervous about my friends

98. I am nervous about my school

99. I am nervous about my life

100. I am nervous about my death



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SELF-EVALUATION QUESTIONNAIRE

Developed by Charles D. Spielberger
in collaboration with
R.L. Gorsuch, R. Lushene, P.R. Vagg, and G.A. Jacobs

STAI Form Y-1

Social Security #: - -

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you feel right now, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

	NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO
1. I feel calm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I feel secure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I am tense	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. I feel strained	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. I feel at ease	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. I feel upset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. I am presently worrying over possible misfortunes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. I feel satisfied	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. I feel frightened	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. I feel comfortable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. I feel self-confident	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. I feel nervous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. I am jittery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. I feel indecisive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. I am relaxed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. I feel content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. I am worried	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. I feel confused	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. I feel steady	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. I feel pleasant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



SELF-EVALUATION QUESTIONNAIRE

STAI Form Y-2

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you feel right now, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

	NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO
21. I feel pleasant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. I feel nervous and restless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. I feel satisfied with myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. I wish I could be happy as others seem to be	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. I feel like a failure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. I feel rested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. I am "calm, cool, and collected"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. I feel that difficulties are piling up so that I cannot overcome them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. I worry too much over something that really doesn't matter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. I am happy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. I have disturbing thoughts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. I lack self-confidence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. I feel secure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. I make decisions easily	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. I feel inadequate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36. I am content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37. Some unimportant thought runs through my mind and bothers me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. I take disappointments so keenly that I can't put them out of my mind	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39. I am a steady person	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40. I get in a state of tension or turmoil as I think over my recent concerns and interests	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix D

Spielberger's State-Trait Anger Expression Inventory (STAXI)

STAXI SELF-RATING QUESTIONNAIRE



64290

Adapted and reproduced by special permission of the Publisher, Psychological Assessment Resources, Inc., 16204 North Florida Avenue, Lutz, FL 33549, from the STAXI by Charles D. Spielberger, Ph.D., Copyright 1979, 1986, 1988, by Psychological Assessment Resources, Inc. Reproduced by special permission from PAR, Inc.

IDENTIFICATION NUMBER	AGE	TODAY'S DATE	HIGHEST GRADE	COLLEGE/UNIV.	MARITAL STATUS
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> / <input type="text"/> / 98	<input type="radio"/> 6TH GRADE OR LESS <input type="radio"/> 7 <input type="radio"/> 8 <input type="radio"/> 9 <input type="radio"/> 10 <input type="radio"/> 11 <input type="radio"/> 12 <input type="radio"/> H.S. DIPLOMA <input type="radio"/> H.S. G.E.D.	<input type="radio"/> 13 <input type="radio"/> 14 <input type="radio"/> 15 <input type="radio"/> 16 <input type="radio"/> 17 <input type="radio"/> 18 <input type="radio"/> A.A. OR A.S. <input type="radio"/> B.A. OR B.S. <input type="radio"/> M.A. OR M.S. <input type="radio"/> L.L.B. <input type="radio"/> Ph.D., Ed., M.D.	<input type="radio"/> SINGLE <input type="radio"/> MARRIED <input type="radio"/> WIDOWED <input type="radio"/> SEPARATED <input type="radio"/> DIVORCED <u>ETHNIC CODE</u> <input type="radio"/> BLACK <input type="radio"/> HISPANIC <input type="radio"/> CAUCASIAN <input type="radio"/> OTHER <u>SEX</u> <input type="radio"/> MALE <input type="radio"/> FEMALE

Part 1 Directions: A number of statements that people use to describe themselves are given below. Read each statement and then blacken the appropriate space on the answer sheet to indicate how you feel *right now*. There are no right or wrong answers. Do not spend too much time on any one statement, but give the answer which seems to best describe your *present feelings*.

	NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO
1. I am furious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I feel irritated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I feel angry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. I feel like yelling at somebody	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. I feel like breaking things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. I am mad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. I feel like banging on the table	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. I feel like hitting someone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. I am burned up	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. I feel like swearing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 2 Directions: A number of statements that people use to describe themselves are given below. Read each statement and then blacken the appropriate space on the answer sheet to indicate how you *generally* feel. There are no right or wrong answers. Do not spend too much time on any one statement, but give the answer which seems to best describe how you *generally* feel.

	ALMOST NEVER	SOMETIMES	OFTEN	ALMOST ALWAYS
11. I am quick tempered	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. I have a fiery temper	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. I am a hotheaded person	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. I get angry when I'm slowed down by other's mistakes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. I feel annoyed when I am not given recognition for doing good work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. I fly off the handle	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. When I get mad, I say nasty things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. It makes me furious when I am criticized in front of others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. When I get frustrated, I feel like hitting someone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. I feel infuriated when I do a good job and get a poor evaluation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

SELF-RATING QUESTIONNAIRE
STAXI

64290

Part 3 Directions: Everyone feels angry or furious from time to time, but people differ in the way that they react when they are angry. A number of statements are listed below which people use to describe their reactions when they feel *angry* or *furious*. Read each statement and then blacken the appropriate space on the answer sheet to indicate how *often* you *generally* react or behave in the manner described when you feel *angry* or *furious*. There are no right or wrong answers. Do not spend too much time on any one statement.

WHEN ANGRY OR FURIOUS....	ALMOST NEVER	SOMETIMES	OFTEN	ALMOST ALWAYS
21. I control my temper	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. I express my anger	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. I keep things in	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. I am patient with others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. I pout or sulk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. I withdraw from people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. I make sarcastic remarks to others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. I keep my cool	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. I do things like slam doors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. I boil inside, but I don't show it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. I control my behavior	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. I argue with others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. I tend to harbor grudges that I don't tell anyone about	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. I strike out at whatever infuriates me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. I can stop myself from losing my temper	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36. I am secretly quite critical of others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37. I am angrier than I am willing to admit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. I calm down faster than most people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39. I say nasty things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40. I try to be tolerant and understanding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
41. I'm irritated a great deal more than people are aware of	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42. I lose my temper	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43. If someone annoys me, I'm apt to tell him or her how I feel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44. I control my angry feelings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Harvard University
Medical Center
Department of
Psychiatry
Massachusetts General Hospital
77 Avenue Louis Pasteur
Boston, MA 02114

Appendix E
IRB Letters of Approval

[Faint, illegible text, likely containing IRB approval letters]

Marshall University
Institutional Review Board

Cabell Huntington Hospital
Institutional Review Board

**Department of
Veterans Affairs**
Human Studies Subcommittee

St. Mary's Hospital
Institutional Review Board

COORDINATOR
1542 Spring Valley Drive
Huntington, West Virginia
25755-9310

February 15, 1999

Kimberly Moore Ashcraft
420 Leigh Terrace
Charleston, WV 25302

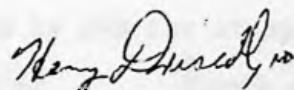
RE: Student Nursing Project:
Depression in Women with Heart Disease
IRB Protocol No. 743

Dear Ms. Ashcraft:

I am granting expedited approval to the addition of St. Mary's Cardiac Rehabilitation Department at St. Mary's Hospital as a site for your study and the submitted informed consent. You have received prior approval from St. Mary's Nursing Committee.

A signed stamped approved copy of the consent is attached. Also enclosed, is IRB Form C, as this project is due for annual review and reapproval. Please complete and return to the IRB Coordinator, Trula Stanley, as soon as possible.

Sincerely yours,



Henry Driscoll, M.D.
IRB Chairperson

743feb/cor.irb

ST. MARY'S HOSPITAL
DEPARTMENT OF NURSING
APPLICATION FOR APPROVAL OF NURSING RESEARCH PROJECT

The Nursing Research Committee at St. Mary's Hospital screens nursing proposals to determine if they are appropriate for implementation at St. Mary's Hospital.

SECTION I and ATTACHED SUMMARY - to be completed by researcher and submitted with the proposal

Name & Credentials Kim Ashcraft MS RN

Address 420 Lehigh Terrace

Charleston, Wv 25302-4619

Place of Employment & Position CAMC Cardiac Rehabilitation CNIV

Name of School & Title of Course for which this project
is requirement Marshall University College of Nursing Master's Thesis
NUR 681

Date application and proposal submitted to St. Mary's
Hospital Research Committee Jan 11, 1999

SECTION II - To be completed by Chairman SMH Research Committee

Proposal Approved Jan 18, 1999 Barbara Stevens
Date Signature of Chairman

Comments:

Approval granted pending expedited approval by the IRB to collect data at St. Mary's. Prior approval granted by IRB for study to be conducted at CAMC.

Proposal ~~Not~~ Approved 4/17/99 Henry W. Duesell
Date Signature of Chairman -IRB

Comments: Expedited approval granted to include St. Mary's Hospital.

Study approved for implementation at CAMC (letter 3/17/98)
STATUS OF APPROVAL: Approval to collect data at St. Mary's is pending.
Indicate EXEMPT or IRB REQUIRED

NOTE: If a proposal does not meet EXEMPT status, researcher must seek IRB approval prior to implementation.

SECTION III - Complete by Associate Executive Director St. Mary's Hospital

Approval DENIED for implementation of project at St. Mary's Hospital

Date Signature of Associate Executive Director

COMMENTS:

The agreement to allow this study to be conducted at St. Mary's Hospital is with the understanding that:

This permission is given voluntarily.

The agency will not be identified in any publication.

Patient/staff participation will be on a voluntary basis.

The investigator will furnish St. Mary's Hospital a summarized report of the results of the study.

Approval GRANTED for implementation of project at St. Mary's

Hospital

1/29/99
Date

Thomas Andrew

Signature of Associate Executive Director



Charleston Area
Medical Center



ROBERT C. BYRD
HEALTH SCIENCES CENTER

OF WEST VIRGINIA UNIVERSITY/CHARLESTON DIVISION

March 23, 1999

Kim Ashcraft, M.S.
Cardiac Rehabilitation
Memorial Division

RE: Your report dated February 27, 1999 regarding study number 98-04-955:
Depression in Women with Heart Disease (None)

Dear Ms. Ashcraft:

Your request for continuing review of the study listed above was reviewed at the March 23, 1999, meeting of the CAMC/WVU Institutional Review Board for the Protection of Human Subjects.

The requested continuation involves changes to the protocol and consent form. This is to confirm that your request for continuation is approved. The consent form as most recently revised is approved. You must obtain signed written consent from all subjects.

You are granted permission to continue your study as described effective immediately. The study is next subject to continuing review on or before March 23, 2000, unless closed before that date.

As with the initial approval, changes to the study must be promptly reported and approved. Contact Cynthia M. Hammons, A.S. ((304) 388-9973; fax (304) 388-9976; email: cindy.hammons@camcare.com) if you have any questions or require further information.

Sincerely,

A handwritten signature in cursive script that reads "John C. Linton".

John C. Linton, Ph.D.
Chair, Institutional Review Board

An Equal Employment Opportunity/Affirmative Action Employer

Appendix F

Data Collection Form

NAME _____ PHONE _____

Address _____

Living with _____

EDUCATION

Grade _____	High School _____	College _____	Postgraduate _____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

1. _____

2. _____

3. _____

4. _____

5. _____

RELATIONSHIP HISTORY

1. _____
2. _____
3. _____

ADDITIONAL

Other _____

Other _____

Depression in Women with Heart Disease

Data Collection Form

AGE _____ RACE _____ Highest Ed. Level _____ M S D W

Cardiac Event MI CABG PTCA STENT Stable Angina Other _____

Time since cardiac event _____

PRE-EXISTING CONDITIONS:

- | | | | |
|------------------------------------------------------|----------------------------------------|------------------------------------------|-------------------------------------------------|
| <input type="checkbox"/> Hyperlipidemia | <input type="checkbox"/> Lung Disease | <input type="checkbox"/> Thyroid Disease | <input type="checkbox"/> Rheumatic Fever |
| <input type="checkbox"/> Sedentary | <input type="checkbox"/> Seizures | <input type="checkbox"/> Glaucoma | <input type="checkbox"/> Stress |
| <input type="checkbox"/> Cancer | <input type="checkbox"/> Bowel Disease | <input type="checkbox"/> Overweight | <input type="checkbox"/> Digestive Disorder |
| <input type="checkbox"/> Liver Disease | <input type="checkbox"/> Hypertension | <input type="checkbox"/> CHF | <input type="checkbox"/> Kidney/Bladder Disease |
| <input type="checkbox"/> Menopausal | <input type="checkbox"/> Diabetes | <input type="checkbox"/> Stroke | <input type="checkbox"/> Musculoskeletal |
| <input type="checkbox"/> Peripheral Vascular Disease | | | |

CAFFEINE USE: No Yes Years used _____ Amt/Day _____TOBACCO USE: No Yes Years used _____ Amt/Day _____ALCOHOL USE: No Yes Years used _____ Amt/Day _____

SLEEP/REST PATTERN:

1. Difficulty Sleeping No Yes Comments _____2. Sleep Medication No Yes Comments _____

ROLE/RELATIONSHIP PATTERN:

1. Lives: Alone With _____

2. Occupation: _____

3. Return to Work No Yes Date: _____

MEDICATIONS:

Beta Blocker Calcium Channel Blocker ACE Inhibitor Digoxin

Diuretic Zyban (Wellbutron) Other _____

Appendix G

Women with Heart Disease Consent Forms

APPROVER

Women with Heart Disease
Consent Form

INTRODUCTION:

I am invited to participate in a research study which will take place Charleston Area Medical Center Cardiac Rehabilitation Department. All individuals who volunteer to participate in our study must know that: a) participation is entirely voluntary; b) I may not personally benefit from the results of this study, but results of the study may help people in the future; and c) I may end my participation in the study at any time and still be helped with future treatment.

There are no risks or discomforts expected by participating in this research. I may ask questions I have of those persons who have discussed the study with me.

NATURE OF THE STUDY:

I understand that the study will evaluate my emotions such as anger, anxiety or stress in order to better understand emotions in women with heart disease. I understand that I will be required to complete two (2) more forms than what I normally will complete as I enter the Cardiac Rehabilitation program. I know that I will be referred to my physician to check on anything which concerns the staff. I understand that the two (2) additional forms will be kept with the rest of my chart in Cardiac Rehabilitation and remain confidential.

RISKS, BENEFITS, INCONVENIENCES, OR DISCOMFORTS:

I understand that I will learn about my emotions. I understand that I will have the opportunity to discuss any feelings or concerns with a licensed counselor or clinical psychologist employed with the Cardiac Rehabilitation program. I understand that completing two (2) additional forms will be the most inconvenient part of the process. I know that there are no expected risks of harm or discomfort to me.

ALTERNATIVE TREATMENT:

Emotions, such as anxiety, anger, and depression, are common after a heart event and often can be treated by discussing these emotions with a licensed counselor or clinical psychologist. Drug therapy, if indicated, will be discussed with my physician(s). Evaluation of the CAMC Cardiac Rehabilitation program has shown a decrease in depression scores with usual team approach therapy.

Patient Signature

IRB
[Signature]
MAR 17 1998

Date

APPROVED

CONFIDENTIALITY OF RECORDS:

I understand that confidentiality of my records will be maintained and that my identity on research forms and in published articles will not be revealed. However, I do understand that identifying data may be made available to the Food and Drug Administration in the event of FDA, other Federal and State Agencies, and Marshall University Institutional Review Board inspection of original data in research files which the investigator is required to maintain.

STATEMENT CONCERNING COMPENSATION:

In the event I suffer an injury caused by the study procedures required specifically by the protocol which defines the study in which I am participating, emergency treatment will be available. The costs of any other medical care are my responsibility or my insurance. No other compensation is available. In no event will other payment or compensation, financial or otherwise, be offered or made by Marshall University, Charleston Area Medical Center, or the investigators.

If I have questions regarding my treatment, I understand I may call my physician, _____.(phone) _____. If I have questions regarding my participation in this study, I may call Kim Ashcraft, MS, RN, at 348-8822. If I have questions regarding my rights as a participant in a research study, I may call Nancy Scher, MD, Marshall University, IRB Chairperson, 1542 Spring Valley Drive, Huntington, WV 25704, at (304) 696-7320, during normal working hours of 8am-4:30pm.

I will not receive payment for my participation in this study.

This is to certify that I have read the explanation of the above research study and agree to participate in the work as described in this protocol and consent form.

Patient Signature (Family Member, if applicable)

Date

Witness

Date

Investigator's Signature

Date

IRB

MAR 17 1998

APPROVED

Informed Consent to Participate in the Research Project Entitled:
Women with Heart Disease

INTRODUCTION:

I am invited to participate in a research study which will take place at St. Mary's Hospital Cardiac Rehabilitation Department. All individuals who volunteer to participate in our study must know that: a) participation is entirely voluntary; b) I may not personally benefit from the results of this study, but results of the study may help people in the future; and c) I may end my participation in the study at any time and still be helped with future treatment.

There are no risks or discomforts expected by participating in this research. I may ask questions I have of those persons who have discussed the study with me.

NATURE OF THE STUDY:

I understand that the study will evaluate my emotions such as anger, anxiety or stress in order to better understand emotions in women with heart disease. I understand that I will be required to complete three (3) more forms than what I normally will complete as I enter the Cardiac Rehabilitation program. I know that I will be referred to my physician to check on anything which concerns the staff. I understand that the three (3) additional forms will be forwarded to the CamCare Health Education and Research Institute and remain confidential.

RISKS, BENEFITS, INCONVENIENCES, OR DISCOMFORTS:

I understand that I will learn about my emotions. I understand that I will have the opportunity to discuss any feelings or concerns with the staff of the Cardiac Rehabilitation program. I understand that completing three (3) additional forms will be the most inconvenient part of the process. I know that there are no expected risks of harm or discomfort to me.

ALTERNATIVE TREATMENT:

Emotions, such as anxiety, anger, and depression, are common after a heart event and often can be treated by discussing these emotions with a licensed counselor or clinical psychologist. Drug therapy, if indicated, will be discussed with my physician(s).

Patient Signature

Date

IRB

FEB 15 1998

APPROVED

CONFIDENTIALITY OF RECORDS:

I understand that confidentiality of my records will be maintained to the extent the law allows and institutional policy and that my identity on research forms and in published articles will not be revealed. However, I do understand that identifying data may be made available to the Food and Drug Administration in the event of FDA, other Federal and State Agencies, and Marshall University Institutional Review Board and St. Mary's Institutional Review Board inspection of original data in research files which the investigator is required to maintain.

STATEMENT CONCERNING COMPENSATION:

In the event I suffer an injury caused by the study procedures required specifically by the protocol which defines the study in which I am participating, emergency treatment will be available. The costs of any other medical care are my responsibility or my insurance. No other compensation is available. In no event will other payment or compensation, financial or otherwise, be offered or made by Marshall University, St. Mary's Hospital, or the investigators.

If I have questions regarding my treatment, I understand I may call my physician, _____, (phone) _____. If I have questions regarding my participation in this study, I may call Kim Ashcraft, MS, RN, at (304) 348-8822. If I have questions regarding my rights as a participant in a research study, I may call Henry Driscoll, MD, Marshall University, IRB Chairperson, 1542 Spring Valley Drive, Huntington, WV 25704, at (304) 696-7320, during normal working hours of 8am-4:30pm.

I will not receive payment for my participation in this study.

This is to certify that I have read the explanation of the above research study and agree to participate in the work as described in this protocol and consent form.

Patient Signature (Family Member, if applicable)

Date

Witness

Date

Investigator's Signature

Date

IRB

FEB 15 1988

APPROVED

Appendix H

State Anxiety Regression Graph

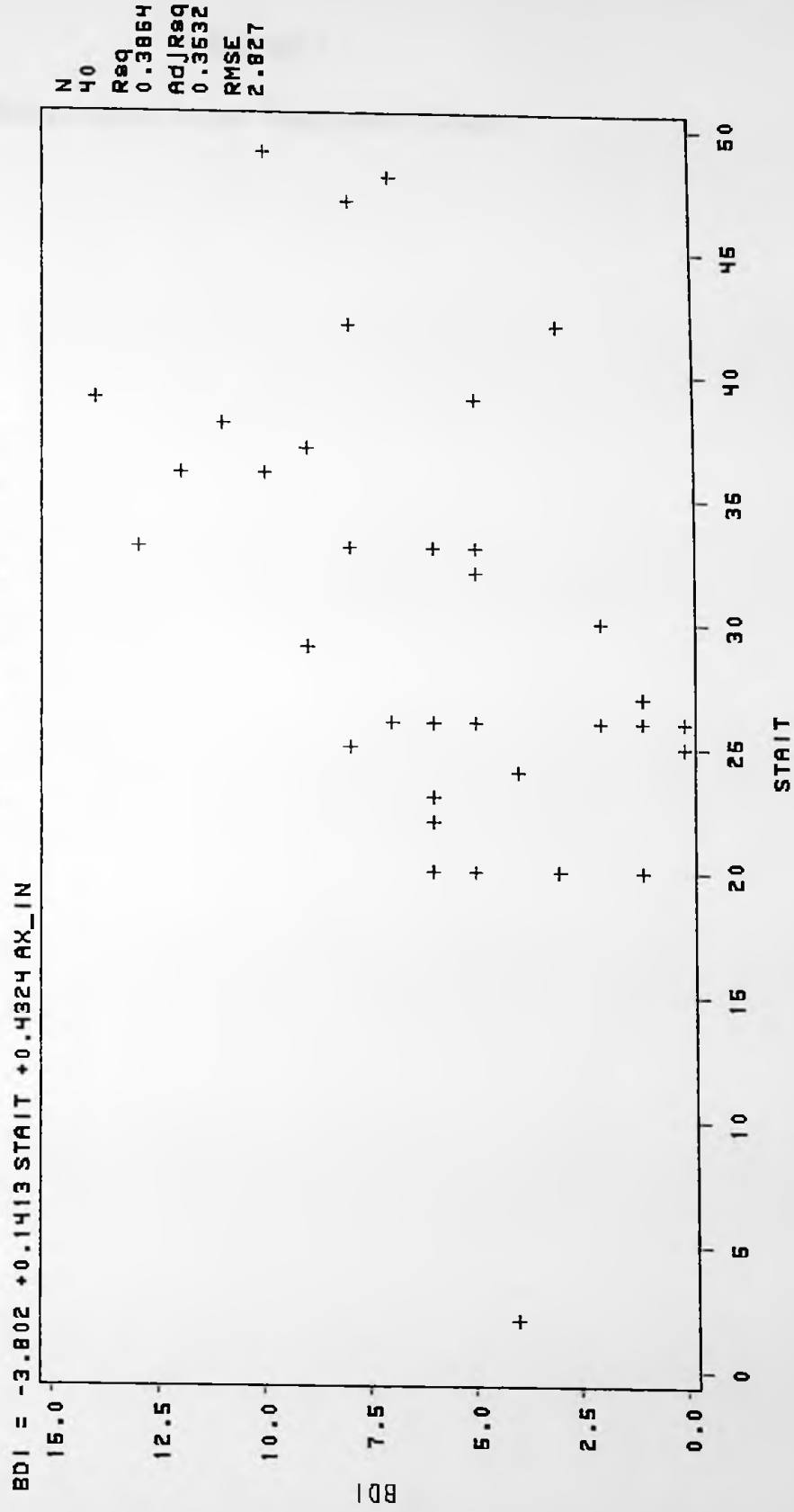
State Anxiety Regression Graph

Depressive Symptomatology



State Anxiety Regression Graph

Stepwise Regression Approach



Appendix I

Suppressed Anger Regression Graph



Suppressed Anger Regression Graph

Stepwise Regression Approach

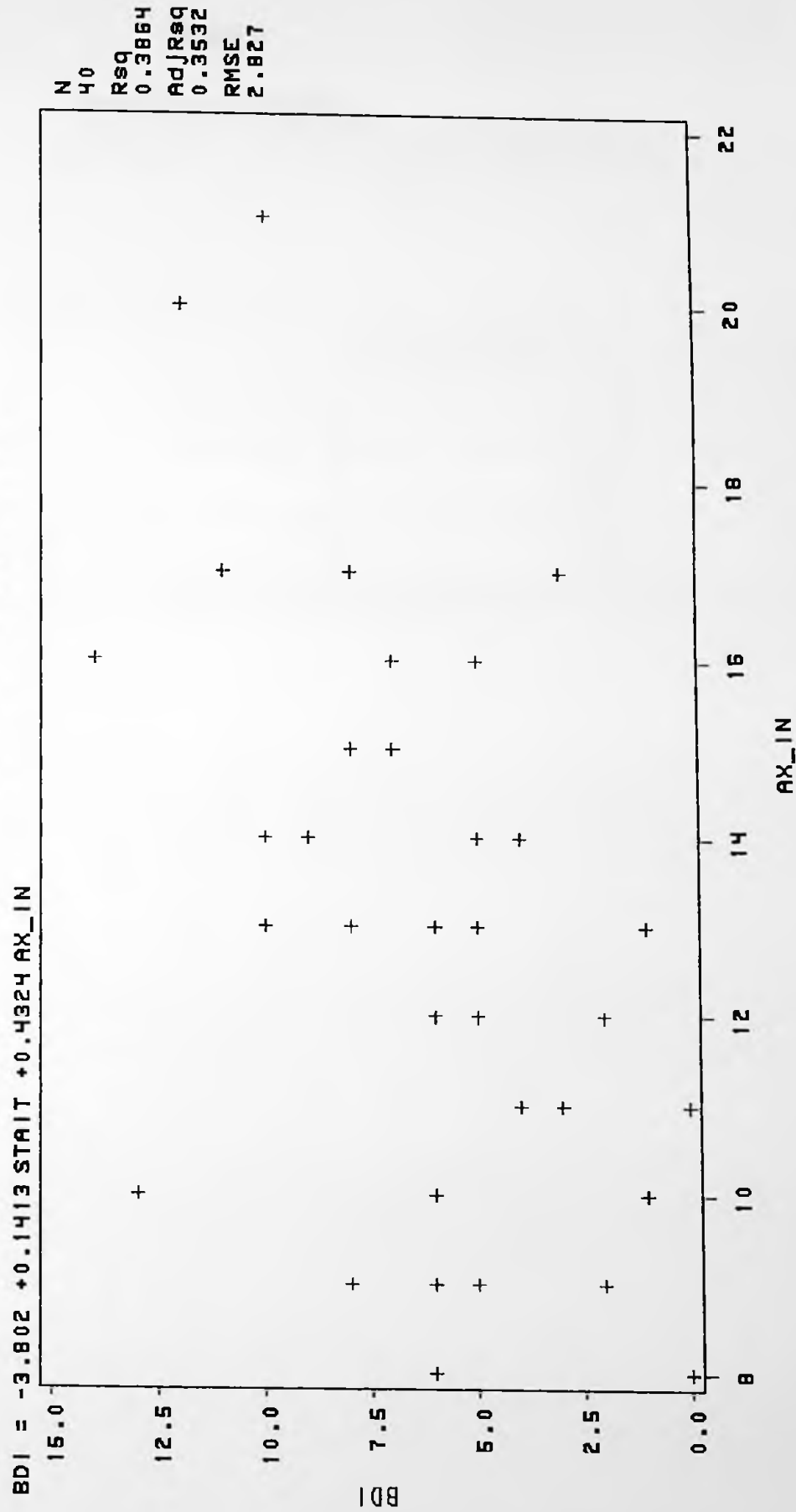


Table 1

Race Demographics

Race	Frequency	Percentage
Caucasian	28	78.00
Other	8	22.00

Table 1 Race Demographics

Race	Frequency	Percent
Caucasian	38	95.00
Other	2	5.00

Table 2

Marital Status

Marital Status	Frequency	Percent
Single	2	5.00
Married	12	47.50
Widowed	13	32.50
Divorced	8	15.00

Table 2 Marital Status

Marital Status	Frequency	Percent
Single	2	5.00
Married	19	47.50
Widowed	13	32.50
Divorced	6	15.00

Table 3

Table 3 Education Level

Education	Frequency	Percent
Grade or less	20	50.00
High School	7	17.50
Postgraduate School	13	32.50

Table 3 Education Level

Education	Frequency	Percent
8th Grade or less	20	50.00
High School	7	17.50
College/Graduate School	13	32.50

Table 4

Time Since Event

Time Since Event	Frequency	Percent
0-3 months	9	22.50
4-12 months	12	30.00
13-24 months	7	17.50
25+ months	12	30.00

Table 4 Time Since Event

Time Since Event	Frequency	Percent
< 3 months	9	22.50
3 to 12 months	12	30.00
13 to 24 months	7	17.50
> 24 months	12	30.00

Table 5 Depression, Anxiety, Anger, and Demographic

Depression, Anxiety, Anger, and Demographic

Demographic Mean Scores and Standard Deviation

Variables	Mean	SD
ED	40.2	11.0
STAT	30.33	8.0
EDN	30.1	8.8
AGE	62.45	9.2
BLANG	10.35	1.18
T-ANG-T	5.05	1.48
T-ANG-R	5.18	1.48
T-ANG	11.58	3.01
AX-EX	11.80	2.08
AX-OUT	11.70	2.43
AX-OUT	25.70	5.2
AX-EX	14.08	2.85
WPC	15.04	4.78

Table 5 Depression, Anxiety, Anger, and
Demographic Mean Scores and Standard Deviation

Variable	Mean	SD
BDI	6.05	3.52
STAIT	30.33	9.67
TRAIT	30.13	8.49
AGE	68.45	9.21
S_ANG	10.35	1.14
T_ANG_T	5.05	1.48
T_ANG_R	6.18	2.06
T_ANG	13.58	3.01
AX_IN	12.88	3.08
AX_OUT	11.70	2.43
AX_CON	25.70	5.28
AX_EX	14.88	6.80
TIME	16.04	14.66

Table 6 Depression, Anxiety, Anger, and Demographic Pearson Correlation Coefficients

	BDI	State	Trait	Age	T_Ang	AX_In	AX_Out	Time
BDI	1	0.5066	0.2592	0.3326	0.0699	0.5	0.0468	-0.1018
	p= —	p=.001	p=.106	p=.036	p=.668	p=.001	p=.774	p=.532
State	0.5066	1	0.5689	0.2177	0.1044	0.3112	-0.1027	0.0148
	p=.001	p= —	p=.000	p=.177	p=.522	p=.051	p=.528	p=.928
Trait	0.2592	0.5689	1	0.2028	0.1736	0.417	-0.1497	-0.2401
	p=.106	p=.000	p= —	p=.209	p=.284	p=.007	p=.357	p=.136
Age	0.3326	0.2177	0.2028	1	-0.1214	0.2721	-0.3248	0.0985
	p=.036	p=.177	p=.209	p= —	p=.456	p=.089	p=.041	p=.545
T_Ang	0.0699	0.1044	0.1736	-0.1214	1	0.24	0.448	0.0163
	p=.668	p=.522	p=.284	p=.456	p= —	p=.136	p=.004	p=.920
AX_In	0.5	0.3112	0.417	0.2721	0.24	1	-0.1284	-0.23
	p=.001	p=.051	p=.007	p=.089	p=.136	p= —	p=.430	p=.153
AX_Out	0.0468	-0.1027	-0.1497	-0.3248	0.448	-0.1284	1	0.1212
	p=.774	p=.528	p=.357	p=.041	p=.004	p=.430	p= —	p=.456
Time	-0.1018	0.0148	-0.2401	0.0985	0.0163	-0.23	0.1212	1
	p=.532	p=.928	p=.136	p=.545	p=.920	p=.153	p=.456	p= —