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Behavioral Assessment and Referral for Patients with Cardiovascular Disease

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Behavioral Assessment and Referral for Patients
with Cardiovascular Disease

by

Sarah June Sadeghi, M.A.

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Project submitted in partial satisfaction of
the requirements for the degree of
Doctor of Psychology

_____

December 2015

Each person whose signature appears below certifies that this doctoral project in his/her opinion is adequate, in scope and quality, as a doctoral project for the degree of Doctor of Psychology.

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ACKNOWLEDGMENTS

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ABBREVIATIONS

CAD	Coronary Artery Disease
CVD	Cardiovascular Disease
PHQ-2	Patient Health Questionnaire-2
PHQ-9	Patient Health Questionnaire-9
CHD	Coronary Heart Disease
AHA	American Heart Association
MI	Myocardial Infarction
LDL	Low-Density Lipoproteins (LDL)
HDL	High-Density Lipoproteins (HDL)
AMI	Acute Myocardial Infarction
CMS	Centers for Medicare & Medicaid Services
BMI	Body Mass Index
USPSTF	U.S. Preventive Services Task Force
BDI	Beck Depression Inventory
IDS-SR	Inventory of Depressive Symptomatology, Self-Report
BSI	Brief Symptom Inventory
I-TEAM	Integrated Telehealth Education and Activation of Mood

ABSTRACT

Behavioral Assessment and Referral for Patients
with Cardiovascular Disease

by

Sarah June Sadeghi

Doctor of Psychology, Graduate Program in Psychology
Loma Linda University, December 2015
Dr. Adam L. Aréchiga, Chairperson

Cardiovascular disease (CVD) is the most frequent cause of death in the United States. CVD affects more than a third of the U.S. population translating to approximately $431.8 billion in direct and indirect costs (Rosamond et al., 2007 as cited in Hunter et al., 2009). Given the significant rates of mental health issues exhibited in cardiovascular patients coupled with the lack of standard screening practices of psychosocial risk factors implicated in cardiovascular disease, the introduction of adequate assessment and referrals to mental health providers could substantially benefit health outcomes of patients.

The aims of this project are to: 1) provide recommendations of assessment practices for healthcare providers treating patients with cardiovascular disease, so they can more accurately assess and refer patients to behavioral health services; and 2) explore organizational change management strategies in creating successful, sustainable plans of integrating psychological assessments and referral practices into routine care for patients with CVD.

CHAPTER 1

INTRODUCTION

Cardiovascular disease (CVD) encompasses a multitude of conditions and diseases related to the heart and blood vessels (Hunter, Goodie, Oordt, & Dobmeyer, 2009). CVD is the most frequent cause of death in the United States. Moreover, CVD affects more than 33% of the U.S. population translating to approximately $431.8 billion in direct and indirect costs (Rosamond et al., 2007 as cited in Hunter et al., 2009). Cardiac psychology is the field of study within health psychology that seeks to uncover psychosocial risk factors implicated in cardiovascular disease and identifies behavioral changes that may prevent and/or ameliorate cardiovascular disease (Erdman & Pedersen, 2011).

Psychological therapies can play a substantial role in the prevention and treatment of CVD. For instance, psychological variables have been implicated in the development of coronary heart disease (CHD), such as psychological stress, the Type A behavior pattern, anger, hostility, and inadequate social support. Other risk factors for CHD involve depression, job strain, vital exhaustion (i.e., low energy, discouragement, and agitation), anxiety, and cardiac denial (i.e., dismissing cardiac symptoms). Psychological treatment of individuals with CVD can effectively target anxiety, hostility, depression, and lifestyle changes that positively impact cardiac health (Allan, & Scheidt, 1996).

While cardiac psychology can substantially contribute to the assessment and treatment of CVD, psychological interventions have had limited applications to this end in medical settings. Therefore, this doctoral project first provides an overview of cardiovascular disease, biopsychosocial risk factors of CVD, and the role of cardiac

psychology in the assessment and treatment of CVD. Secondly, this project sets forth a program for a mental health outreach program for patients with CVD.

This project aims to assist psychologists, consultants, and/or other healthcare professionals that have an interest in integrating cardiac psychology practices into hospital settings. Included in this project are practical ways of introducing cardiac psychology practices to healthcare professionals. This project also includes practical tools that can be used directly by clinicians to assess for psychosocial risk factors implicated in cardiovascular disease. Once these psychosocial risk factors are assessed, patients can be referred to behavioral health services as needed.

In addition to providing guidelines for assessment practices in cardiology, evidence-based methods for leading change in organizations are integrated into this project to ensure successful implementation of cardiac psychology practices. Specifically, this project incorporates change management strategies from *The Heart of Change Field Guide* (Cohen, 2005). This field guide was based on research by Kotter and Cohen (from Deloitte Consulting), who organized a team of people to conduct interviews in nearly one hundred organizations worldwide regarding change efforts. One of the most important findings in this research was the discovery that individuals were most motivated to change not just based on empirical facts or research, but based on influential experiences that altered the way they felt about the change initiative. Organizational change management is an important consideration because cardiac psychology is a new field and healthcare professionals will need to introduce many changes to a hospital setting to fully integrate cardiac psychology practices into mainstream medicine.

CHAPTER 2

LITERATURE REVIEW

Cardiovascular disease (CVD) encompasses a multitude of conditions and diseases related to the heart and blood vessels, such as coronary artery disease, cardiomyopathy, valvular heart disease, pericardial disease, arteriosclerosis, aneurism, high blood pressure, stroke, and peripheral artery disease (Hunter, Goodie, Oordt, & Dobmeyer, 2009). CVD usually refers to conditions and diseases in which blood vessels are constricted or obstructed, potentially resulting in a heart attack, chest pain (angina) or stroke. CVD also includes infections and factors that impact the muscle of the heart, valves, or beating rhythm (Mayo Clinic, 2013).

With the exception of one year in the past century, the most frequent cause of mortality has been attributable to CVD in the United States. Moreover, CVD affects more than 33% of the U.S. population translating to approximately $431.8 billion in direct and indirect costs (Rosamond et al., 2007 as cited in Hunter et al., 2009). While the fatality rates from heart disease and stroke are highest for individuals at least 65 years of age or older (Xu, Kochanek, Murphy, Tejada-Vera, 2010), CVD is considered part of impaired aging as opposed to normal or successful aging (Greenlund, Keenan, Clayton, Pandey, & Hong, 2012).

Major Areas of Cardiovascular Disease

CVD has been conceptualized as consisting of three prominent categories: 1) coronary heart disease, 2) valvular heart disease, and 3) cardiomyopathy (Scheldt, 1996 as cited in Hunter et al., 2009). Coronary heart disease (CHD), also labeled coronary

artery disease (CAD), is caused by atherosclerosis (i.e., the accumulation of fatty deposits on the arterial walls that furnish blood to the heart). Outcomes of CHD may include angina pectoris (i.e., chest pain), acute myocardial infarctions (i.e., heart attacks), and sudden cardiac death (Hunter et al., 2009). In the United States, sudden cardiac death is the primary cause of natural death and is attributable to half of cardiovascular disease mortality (Cleveland Clinic, 2010).

In valvular heart disease at least one of the four heart valves (i.e., the mitral, aortic, tricuspid or pulmonary) is injured or defective. If working appropriately, the valve's role is to maintain blood flow in an effective direction, force, and time. In valvular heart disease the valves are constricted and stenotic (i.e., hardened); thus, they are hindered from opening or closing entirely (John Hopkins Medicine, n.d.). The development of valvular heart disease usually stems from rheumatic heart disease, age-related degeneration, or congenital abnormalities (Hunter et al., 2009). Symptoms experienced by patients are dependent on the severity of the valvular heart disease. In mild forms of the disease, there may not be any observable symptoms. However, in more severe forms of the disease, patients may experience congestive heart failure and other negative health outcomes (John Hopkins Medicine, n.d.).

Cardiomyopathy describes diseases reducing the strength of the heart muscle (Hunter et al., 2009). Depending on the severity of the cardiomyopathy, some individuals may have no symptoms and require no treatment (if their condition is mild). However, other people may develop severe cases, in which the heart becomes less effective in pumping blood and ensuring an average electrical rhythm, which may result in heart

failure, arrhythmias (i.e., irregular heartbeats), and other deleterious health outcomes (National Institutes of Health, 2011).

Risk Factors of Cardiovascular Disease

A myriad of biopsychosocial factors have been implicated in the development of CVD and the knowledge of these risk factors is essential to the assessment and treatment of CVD. The following section describes these physical, behavioral, emotional, and environmental risk factors. Individuals who may be at risk for, or who have already developed, a CVD should be assessed.

Physical Risk Factors

Certain risk factors for CVD such as demographic variables (e.g., age, sex, and race) as well as genetic predispositions cannot be modified. However, physical risk factors such as diabetes, high blood pressure, and hypercholesterolemia can be monitored or altered to reduce the risk of CVD. Diabetes for example, tends to be correlated with the later diagnosis of coronary heart disease, peripheral arterial disease, and cardiomyopathy (Hunter et al., 2009).

High blood pressure additionally increases the risk of CVD—specifically, coronary heart disease, strokes, and congestive heart failure (Kannel, 1996). Furthermore, the probability that those with pre-hypertensive blood pressures will go on to develop hypertension is high (i.e., at a 90% higher risk than those with low blood pressure) (Vasan et al., 2002).

Cholesterol is a third variable that is related to the increased risk of CVD. Having a great quantity of low-density lipoproteins (LDL) cholesterol is described as hypercholesterolemia, which leads to atherosclerosis. Levels of LDL can be lowered by avoiding foods that contain high quantities of saturated fat, trans fat, and cholesterol. Another form of cholesterol, high-density lipoproteins (HDL) cholesterol, can also contribute towards CVD if levels of HDL cholesterol are low. In terms of treatment for cholesterol, the National Cholesterol Education Program (2002) encourages lipid-lowering treatments, aimed at LDL cholesterol (Hunter et al., 2009).

*** Behavioral Risk Factors***

A variety of behavioral health factors are likewise implicated in the development and prognosis of CVD, such as cigarette smoking, overweight, and sedentary behavior (Kannel, 1992 as cited in Landsbergis et al., 2003) as well as diet, alcohol consumption, and medication adherence (Hunter et al., 2009).

Patients who are at risk or who already have CVD can lower their blood pressure and improve cardiovascular functioning with their diet. The dietary approaches to stop hypertension (DASH) eating plan is advised for those who are attempting to modify their diet (Sacks et al., 2001). Moreover, to reduce the risk of developing cardiovascular disease according to the American Heart Association, individuals are advised to eat a variety of fruits and vegetables; whole-grain, high-fiber foods; fish (oily fish in particular, at least twice a week); fat-free or low-fat (1% fat) dairy items; and reduced consumption of sugars, salt, and alcohol (Lichtenstein et al., 2006).

Alcohol, if consumed moderately (i.e., no more than one standard drink for women and two standard drinks for men per day) appears to be a protective factor, as it is associated with a lower probability of mortality, especially mortality due to coronary heart disease. Individuals who consume alcohol in moderation have lowered risk compared to those who do not consume alcohol and those who drink excessively (i.e., more than the aforementioned moderate rates) (Camargo et al., 1997; Di Castelnuovo, Rotondo, Iacoviello, Donati, & de Gaetano, 2002; Gronbaek et al., 1995 as cited in Hunter et al., 2009).

Smoking cigarettes is understood by many in the scientific community to injure the coronary endothelium. This increases the vulnerability to the creation and perpetuation of atherosclerotic plaque. Additionally, smoking cigarettes heightens the probability of plaque breakage, which can lead to myocardial infarction (MI) and sudden cardiac death (Allan, 2012).

Finally, adherence to interventions related to medication and lifestyle changes is concerning in the majority of the patient population diagnosed with CVD. Over two thirds of patients do not adhere to prescribed medication (Sherbourne, Hays, Ordway, DiMatteo, & Kravitz, 1992 as cited in Hunter et al., 2009), which may be due to a range of variables, such as emotional factors (e.g., depression), failing to remember, attending to other priorities, inadequate information, and willfully choosing to avoid taking medication. Inadequate adherence to medications may also be attributed to physician factors: by advising medications that are challenging to follow; providing insufficient information about the medication; choosing a medication regimen that does not account for the cost to the patient; and developing inadequate professional relationships with

patients (Osterberg & Blaschke, 2005). Therefore, it is suggested that patients be continually assessed for adherence to medical and psychological interventions.

*** Emotional Risk Factors ***

Stress, depression, anxiety, hostility, and pessimism are all associated with the diagnosis of CVD. Acute stressors, such as bereavement and trauma are related to the diagnosis of CVD (Rozanski, Blumenthal, & Kaplan, 1999), but chronic stressors, such as marital discord, are also significantly related to the development of CVD (Orth-Gomér, 2012). The variation in responses to chronic and acute stressors suggests that individual cardiovascular reactivity may be a separate risk factor in developing CVD (Manuck, 1994 as cited in Hunter et al., 2009).

Depression is related to numerous CVDs, such as coronary heart disease (Musselman, Evans, & Nemeroff, 1998), coronary artery disease (Kop, 1999; Lesperance & Frasure-Smith, 2000 as cited in Hunter et al., 2009), and heart failure (Havranek, 2006 as cited in Hunter et al., 2009). When patients were assessed after an acute myocardial infarction (AMI), depression rates were three times greater in this patient population than the overall community. Across studies of patients hospitalized for an acute myocardial infarction, the prevalence rate of depression was about 16% to 45%. When only major depression was considered, the prevalence rate after an AMI was about 20% in studies that used structured clinical interviews (Thombs et al., 2006). Individuals with CHD and a diagnosis of major depressive disorder or significant depressive symptoms tend to have a poor prognosis. According to a meta-analysis of individuals with CHD, the risk of mortality within two years of assessment doubled in patients with CHD who also

demonstrated depressive symptoms, in contrast to patients without depressive symptoms (Barth, Schumacher, & Herrmann-Lingen, 2004).

However, the depression exhibited by patients with CVD appears to be qualitatively different to some extent than in individuals without CVD. The presentation of depression in patients with CVD includes many physical symptoms, such as fatigue, low energy, and irritability usually in lieu of severe depressed mood or low self-esteem (Kop, 1999; Kop & Ader, 2006; Lesperance & Frasure-Smith, 2000 as cited in Hunter et al., 2009). Due to the atypical presentation of depression in patients with CVD, depression may be particularly undiagnosed and therefore untreated in this population (Freedland, Lustman, Carney, & Hong, 1992). Thus, screening for depression can be considerably valuable in patients with CVD.

Anxiety is another common diagnosis for those with CVD, with the majority (70-80%) of patients experiencing anxiety following an acute cardiac event (Trumper & Appleby, 2001 as cited in Hunter et al., 2009) and approximately one fifth to one fourth of patients with coronary heart disease experiencing anxiety (Januzzi, Stern, Pasternak, & DeSanctis, 2000 as cited in Hunter et al., 2009). Furthermore, anxiety symptoms have been linked to fatalities from atherosclerosis and the development of sudden cardiac death (Searight, 2010). Research has indicated that anxiety may play a greater role in those with CVD subsequent to a diagnosis of CVD, as opposed to a major risk factor in the development of CVD (Sears, Todaro, Lewis, Sotile, & Conti, 1999 as cited in Hunter et al., 2009). However, screening and treatment for anxiety may be instrumental in improving quality of life and cardiac wellness.

Hostility, which is inclusive of anger, cynicism, and mistrust, is considered to be a significant risk factor in the development of coronary artery disease (Rozanski, Blumenthal, & Kaplan, 1999). According to Tindle and colleagues (2009) women categorized as the most cynical and hostile exhibited greater rates of coronary heart disease as well as total mortality. In the same study, the most optimistic women had a lower risk of coronary heart disease and mortality. The health outcomes of optimism and cynical hostility were discovered to be independent, indicating that optimism appears to be useful to study even apart from hostility.

Recent studies have demonstrated a significant link between optimism and CVD as well as mortality. These studies have promising results, which suggest that optimism can impact positive prognosis and mortality outcomes. When controlling for age, sex, chronic disease, education, smoking, alcohol, history of CVD, body mass, and cholesterol level, dispositional optimism was indicative of a reduced risk of death by CVD and all-cause mortality (Giltay, Geleijnse, Zitman, Hoekstra, and Schouten, 2004). Similarly, in a 10-year study of men, high levels of optimism defended against incidence of coronary heart disease (CHD), non-fatal myocardial infarction, fatal CHD and angina pectoris (Kubzansky, Sparrow, Vokonas, and Kawachi, 2001 as cited in Seligman, 2008). Optimism appears to be an important protective factor not only in developing CVD, but subsequent to a major cardiac event (Leedham, Meyerowitz, Muirhead, and Frist, 1995 as cited in Seligman, 2008). For instance, dispositional optimism has been significantly correlated with quicker recovery rates from hospital stay and a more rapid adjustment to activities of daily living post hospitalization (Scheier, Matthews, Owens, Magovern, Lefebvre, Abbott, and Carver, 1989 as cited in Seligman, 2008).

Environmental Risk Factors

Environmental factors such as low social support, low SES, and vocational stress are risk factors for CVD (Lett et al., 2005; Landsbergis et al., 2003). In terms of social support risk factors, it was found that women who acknowledged having relational discord in their marriage were three times more vulnerable to having another cardiac event than women who reported having marital bliss (Orth-Gomér, 2012). The women with marital discord also tended to have clinically significant depression. Martial stress was strongly correlated with depression, such that women with both CHD and spousal relationship stress had an average of more than five symptoms of depression, in contrast to healthy women who denied marital stress and typically reported only one symptom of depression (Orth-Gomer, 2001).

While low social support appears to be a risk factor in CVD, the findings regarding the implementation of interventions geared towards increasing social support are mixed. In a comprehensive review of social support interventions Hogan and colleagues discovered that 83% of social support intervention studies yielded positive outcomes with respect to "well-being, social support, and clinical health outcomes" (Lett et al., 2005, p. 875). However, a dearth of evidence specifies what types of social support interventions and therapeutic methods are successful in positive outcomes. Moreover, research is needed to determine what impact social support interventions would have on individuals with CHD (Lett et al., 2005).

While factors such as sedentary behavior and smoking are risk factors for CVD, they are highly associated with individuals in "low-control work environments" (Kawachi & Marmot, 1998, p. 162 as cited in Landsbergis et al., 2003). Job strain as

defined by "work that combines high psychological work demands with low job decision latitude, or job control" (Karasek & Theorell, 1990 as cited in Landsbergis et al., 2003), has been positively correlated with CVD in most of the 24 studies on job strain conducted since 2000 (Belkit, Landsbergis, et al., 2000; Brisson, 2000 as cited in Landsbergis et al., 2003). Additionally, work that demands a great level of vigilance to prevent a calamity (i.e., threat-avoidant vigilant work) is associated with CVD. For this reason certain professions such as urban mass transit operators, truck drivers, air traffic controllers, and sea pilots tend to be particularly at risk for developing CVD.

Cardiac Psychology and Mental Health Referrals

The majority of patients who have clinically substantial symptoms of depression and anxiety receive treatment from primary care medical staff (Miranda, Hohnmann, & Attikisson, 1994 as cited in Gunn & Blount, 2009). Furthermore, 20% to 60% of patients who seek treatment in primary care meet criteria for mental health conditions, but only approximately 20% to 30% of these patients are identified by physicians. One important reason why patients with mental health issues are unrecognized by physicians is that patients tend to emphasize their physical symptoms rather than psychological symptoms (Searight, 2010). Numerous health care providers (e.g., cardiologists, nurse practitioners, physician assistants) do not examine psychological factors, such as anxiety and depression, as causing and/or influencing physical symptoms (Fisher & Collins, 2012). Secondly, when psychological symptoms such as depressed mood and anxiety co-occur with a medical condition, it may be difficult to assess whether the medical condition is causing or contributing to the psychological symptoms or vice versa (Searight, 2010).

According to a national survey deployed to cardiovascular physicians employed in the U.S., 49.9% had no prior knowledge that depression was a direct predictor of cardiac outcomes; 71.2% inquired about depression for fewer than half of their patients; and most (79%) used no formal screening measure of depression. Based on self-reports of cardiovascular physicians, 84.8% indicated that 1% to 50% of their patients have depression. About half (55.5%) of cardiovascular physicians treat depressed patients with medications (i.e., sertraline, paroxetine, fluoxetine, escitalopram, citalopram, bupropion, tricyclic antidepressants, and venlafaxine). However, according to the national survey cardiovascular physicians "regularly refer" their patients to mental health professionals. Specifically, when referrals are made, 83% of referrals for depressed patients with CAD are to psychiatrists, 43.2% are to psychologists, 32.3% are to social workers, and 19.5% are to other mental health professionals (Feinstein, Blumenfield, Orlowski, Frishman, & Ovanessian, 2006).

Primary care medical staff frequently lacks the time and the training to treat patients with mental health disorders. Furthermore, medical staff does not often have working relationships with psychologists, and may not be able to refer patients accordingly (Gunn & Blount, 2009). However, if working relationships are established between medical professionals and behavioral health specialists, it is likely that more patients will be appropriately treated because physicians are typically highly regarded by patients. This corresponding "halo" effect can transfer to a referring behavioral health provider (Searight, 2010). Additionally, research on referral programs indicates that at least 69% of medical patients who were referred for mental health care attended therapy

within a primary care setting while a considerable albeit lower number of referred

patients have followed-up with mental health services in specialty care (Kessler, 2012).

Project Aims

Given the significant rates of mental health issues exhibited in cardiovascular

patients coupled with the lack of standard screening practices of psychosocial risk factors

implicated in cardiovascular disease, the introduction of adequate assessment and

referrals to mental health providers could substantially benefit health outcomes of cardiac

patients.

The aims of this project are to: 1) provide recommendations of assessment

practices for healthcare providers treating patients with cardiovascular disease, so they

can more accurately assess and refer patients to behavioral health services; and 2) explore

organizational change management strategies in creating successful and sustainable plans

of integrating psychological assessments and referral practices into routine care for

patients with CVD.

CHAPTER 3

A CARDIAC PSYCHOLOGY ASSESSMENT AND REFERRAL PROGRAM

Assessment can be instrumental in identifying psychosocial risk factors for cardiovascular disease, so that appropriate interventions can be provided. With an assessment of risk factors for cardiovascular disease by means of screening instruments in a medical setting, patients with CVD can be directed towards comprehensive cardiac rehabilitation services that include a psychosocial component, thereby potentially decreasing CVD mortality rates and improving quality of life.

Additionally, the Centers for Medicare & Medicaid Services (CMS) (which is within the Department of Health and Human Services), has asserted that heart disease (coronary artery disease and congestive heart failure) represents one of the highest impact conditions for the CMS populations based on prevalence and cost. Given that it is a high impact condition, it is one condition that the CMS recommends as a focus for quality assessment practices (Centers for Medicare & Medicaid Services, n.d.). For specific guidelines set forth by the CMS for quality measurement and for the purpose of better medical service delivery, the interested reader is directed to the following Web site: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityInitiativesGenInfo/Downloads/QualityMeasurementRoadmap_OEA1-16_508.pdf.

Assessment of Cardiovascular Disease Risk Factors

The following section describes recommended strategies for assessing various risk factors in cardiovascular disease. This section provides ideas about areas of

assessment that can be built into an existing organizational questionnaire or data collection tool. These areas of assessment can also be used to create an additional stand-alone survey that an organization can use in the assessment of risk factors for cardiovascular disease. Existing assessment tools of cardiovascular disease risk factors will be later explored for an organization to consider.

Assessing Physical Risk Factors

Psychologists can assess physical risk factors by gathering information about a patient's medical history. Some pertinent areas of focus for assessment may include the following conditions/factors: a background history of diabetes, blood pressure, hypercholesterolemia, medications, side effects of medications, quality of sleep, pain, fatigue, and impact of patient's condition on daily life (Hunter et al., 2009). This information can be sent to a mental healthcare clinician with the patient's consent using a release of information. Sharing this information about the patient can allow for greater coordination and consistency of care.

Assessing Behavioral Risk Factors

Psychologists can play an important role in both the assessment and treatment of behavioral variables associated with CVD. Given the aforementioned risk factors, health behavior assessment questions may be related to tobacco use, body mass index (BMI), alcohol intake, diet (e.g., typical meals, sodium intake, consumption of meat), as well as prescribed medications, side effects, and adherence (Hunter et al., 2009). Providing this

information to a behavioral health service provider (with the patient's consent) may be helpful in customizing behavioral health goals in counseling.

Assessing Emotional Risk Factors

Behavioral health clinicians have expert knowledge about emotional factors that affect health, and are well equipped to assess and treat the aforementioned emotional risk variables. To discover emotional risk factors, potential areas of assessment may include: the degree of overall life stress, the occurrence of any recent major life changes, the quality of the patient's social network, and coping mechanisms for managing stress (Hunter et al., 2009). In addition, questionnaires assessing depression and other emotional risk factors are ubiquitous and make accurate screening tools. (See the Existing Survey Tools section for more details of emotional risk factor screening tools.)

Assessing Environmental Risk Factors

Mental health providers can assess the previously referenced vocational risk factors for CVD by asking patients regarding their: type of work, workplace stressors, coping strategies for work demands, and decision making control. Similarly, assessment regarding patients' social support networks, such as the size of their social support network and degree they feel supported by this network, could yield beneficial information. Mental health providers can encourage patients to improve their social support system by spending more time with family, joining social groups, or contributing to positive institutions (Hunter et al., 2009). Additionally, psychologists can create workplace interventions designed for the prevention of hypertension and CVD associated

with the workplace, such as by leading individual and workplace health promotion programs as well as assisting in job redesign efforts (Landsbergis et al., 2003).

Existing Survey Tools

Many existing survey tools can be used to assess for psychosocial risk factors for cardiovascular disease. The next section provides an overview, but not exhaustive list, of some common behavioral health questionnaires in medical settings. For additional questionnaires, the interested reader may refer to the SAMHSA-HRSA Center for Integrated Health Solutions Web site: http://www.integration.samhsa.gov/clinical-practice/screening-tools.

The following criteria are recommended when selecting measures in a medical setting: 1) conciseness (i.e., a questionnaire of 20 items or less); 2) the survey should ideally have corresponding translations, so that the survey can be administered in the native language of the patient, if possible); 3) free or inexpensive (i.e., many survey instruments can be obtained for free or inexpensive cost, so it is unnecessary to incur additional costs for survey instruments); 4) good psychometric properties; 5) a reading level that most patients will understand (i.e., an 8th grade reading level or below is recommended); and 6) user-friendly scoring (i.e., selecting a measure that takes little effort and minimal time to score) (Robinson & Reiter, 2007).

Given that depression is the emotional risk factor with the greatest volume of research suggesting its pivotal role associated with cardiovascular disease (Allan, 2012), it is recommended that a focus on depression be a priority in assessment and treatment. The American Heart Association Prevention Committee of the Council on Cardiovascular

Nursing, Council on Clinical Cardiology, Council on Epidemiology and Prevention, and Interdisciplinary Council on Quality of Care and Outcomes Research advocate for screening and treating depression based on research that depressive symptoms are associated with increased mortality risk, reduced adherence to medications, significant rate of noncompliance with prescribed medical treatments, and increased use of healthcare resources and expenditures (Lichtman et al., 2008). The Science Advisory from the American Heart Association (AHA) was criticized based on a systematic review, which suggested that while screening tools for major depression are valid among individuals with CHD, most individuals with CHD and depressive symptoms do not have major depression; depression treatment in individuals with CHD demonstrated limited effectiveness in changing depression symptoms; and finally more research is needed to demonstrate that screening for depression positively impacts the prognosis of CHD (Ziegelstein, Thombs, Coyne, & de Jonge, 2009). However, the U.S. Preventive Services Task Force (USPSTF) (2002) recommended screening adults for depression in clinical settings when those settings have accurate diagnostic methods, valid treatments, and appropriate follow-up. Furthermore, the USPSTF reviewed sufficient data that using screening measures in primary care increases the amount of correctly diagnosed patients with depression and that treatment of these depressed patients leads to reduced clinical morbidity. Finally, the USPSTF posited that the advantages of screening are greater than the possible detriments.

According to the U.S. Preventive Services Task Force (2002) no one screening tool for depression in particular is recommended, but a screening tool can be selected based on the clinician's predilection, the type of patients, and clinical context. It is also

important to note the utility of selecting a measure of depression that incorporates a severity level, including mild symptoms. A measure that accounts for even mild symptoms of depression is important because mild depressive symptoms in patients with cardiovascular disease are related to an elevated risk for the development of acute coronary syndromes and repeated cardiac events in addition to increased mortality rates (Davidson et al., 2006).

To measure depression, various tools have been used in clinical research for patients with acute myocardial infarction (AMI) including structured interviews, the Beck Depression Inventory, and the Hospital Anxiety and Depression Scale (Thombs et al., 2006). The National Heart, Lung, and Blood Institute Working Group Report (Davidson et al., 2006) advocated for the use of two self-report depression screeners for patients with cardiovascular disease in research studies: the Beck Depression Inventory (BDI) and the Inventory of Depressive Symptomatology, self-report version (IDS-SR). For clinical purposes, depression instruments have included the Zung Self-Depression Scale, Beck Depression Inventory, General Health Questionnaire, and Center for Epidemiologic Study Depression Scale (U.S. Preventive Services Task Force, 2002).

The Beck Depression Inventory-II (BDI-II), which is an assessment of the severity of depressive symptoms based on the DSM criteria, is particularly relevant for individuals with CVD. Research has demonstrated a significant relationship between depression symptoms measured by BDI scores and cardiac fatalities, such that the level of depressive symptoms (particularly indicative of moderate to severe levels of depression) predicted mortality rates upon admittance for MI (Lespérance, Frasure-Smith, Talajic, Bourassa, 2001). In a cardiac rehabilitation program based at the Wellness

Institute at Seven Oaks General Hospital and the Manitoba Cardiac Institute (Reh-Fit

Centre), a BDI-II score of 20 or above was identified as a psychological risk factor for

CVD (Kaoukis, 2008). This program also used the Brief Symptom Inventory (BSI),

which is a brief instrument designed to measure many psychological symptoms and their

intensity (Pearson, 2012). Two T-scores of 64 or higher on the BSI indicated CVD risk,

warranting further attention. Suicidal ideation was identified as a third risk factor to

assess.

Additional depression instruments for clinical purposes include the Patient Health

Questionnaire-2 (PHQ-2) and Patient Health Questionnaire-9 (PHQ-9), which are

recommended by the American Heart Association Prevention Committee of the Council

on Cardiovascular Nursing, Council on Clinical Cardiology, Council on Epidemiology

and Prevention, and Interdisciplinary Council on Quality of Care and Outcomes Research

(Lichtman et al., 2008).

Patient Health Questionnaire-2 (PHQ-2)

The Patient Health Questionnaire-2 has two items inquiring about whether the

patient indicates experiencing the following symptoms in the last two weeks: 1) little

interest or pleasure in doing things, and 2) feeling down, depressed, or hopeless. The

PHQ-2 has good sensitivity and specificity for identifying depressive disorders. A

recommended cutpoint is ≥3 on the PHQ-2 (Kroenke, Spitzer, Williams, & Löwe, 2010).

Patient Health Questionnaire – 9 (PHQ-9)

The PHQ-9 is a nine-item screening measure for depression. The PHQ-9 also has good sensitivity and specificity for identifying depressive disorders. It is designed to be completed in at most five minutes and the majority of patients are reported to complete it independently. While the PHQ-9 can be useful for diagnostic purposes, it also indicates a level of severity, so a patient's symptoms can be tracked over time (Lichtman et al., 2008). This may be especially useful in evaluating the effectiveness of various interventions for depression.

A recommended cutpoint on the PHQ-9 is ≥10 (Kroenke, Spitzer, Williams, & Löwe, 2010). However, a recent study found cut-off scores ranging from 8 to 11 were adequate for diagnostic purposes on the PHQ-9. This study recommended that practitioners take population and setting into account when selecting a cut-off score, suggesting that using a cut-off score of 10 in hospitals may generate more false negatives, but in a primary care setting, a cut-off score of 10 may lead to more false-positives (Manea, Gilbody, & McMillan, 2012).

Assessment Practices in Cardiology

Routine depression screening of patients with coronary heart disease (CHD) would likely be beneficial for the reasons previously discussed. The Science Advisory from the American Heart Association (AHA) recommended that the PHQ-2 be used as an initial screener for patients and that if patients endorse either or both items on the PHQ-2, that the PHQ-9 also be administered to identify any other potential depressive symptoms and determine level of severity (Lichtman et al., 2008). Recent research advises that

routine screening for depression not only occur at the first appointment of an individual with CHD, but additionally at the next appointment, again in 2-3 months after the initial cardiology visit, and at a one year follow-up appointment, when the patient may also be screened for other primary risk factors for CHD (Colquhoun et al., 2013).

When using the PHQ-9, of particular importance is an endorsement of suicidality (question 9), in which case an immediate suicide assessment should be conducted. If the patient is safe, that patient can still be referred to a mental/behavioral health specialist. If the patient is at immediate risk, the patient should be referred to the emergency department. For patients with mild symptoms of depression (PHQ-9 score<10), it is advised that healthcare professionals follow-up with the patient at the next patient visit within 30 days. If the patient's symptoms continue or if the PHQ-9 score is above 10, the patient may be referred for a more extensive clinical assessment by a professional trained to diagnose depression. If a patient obtains ratings indicative of mild-to-moderate depression (a PHQ-9 score of 10-19) or major depression (a PHQ-9 score of >20, then it is advisable to refer that patient to a more extensive clinical assessment by a trained professional who can diagnose depression (Lichtman et al., 2008).

If the patient obtains elevated depression ratings, a physician or nurse may consider discussing the answers with the patient before the referral is made (Lichtman et al., 2008). By following up with the patient, a physician or other healthcare professional may be able to determine whether the emotional symptoms are caused by a medical condition or may be the result of a depressive disorder (Morrison, 1997).

Mental symptoms are not frequently caused by medical conditions; however, certain medical conditions can cause depressive symptoms. A listing of medical

conditions that can cause depressive and anxious symptoms is included in Appendix A. When observing changes in the patient's mental status exam (e.g., the patient's physical appearance, behavior, speech, communication, emotion, character, or decision-making skills), three possible underlying causes of the changes include: 1) a primary mental disorder, 2) a physical condition, or 3) a harmless change. Physical causes should be addressed first and if these are ruled-out, the change in symptoms is likely due to a mental disorder (Morrison, 1997).

The U.S. Preventive Services Task Force (USPSTF) (2002) recommends that adult primary care patients be screened for depression, but suggested this recommendation for facilities that could provide adequate diagnosis, therapy, and follow-up. Research has demonstrated that studies which not only screened patients for depression, but also arranged the screening with appropriate treatment and post-assessment, achieved better results (U.S. Preventive Services Task Force, 2002). It is recommended that if referrals are made to physicians for possible medication treatment, that referrals also be made to mental health/behavioral health professionals that can provide counseling (e.g., psychologists, social workers, and/or other professionals with similar mental health qualifications).

If screening measures and referral providers are selected by the management in a cardiology office, these system-wide changes should be introduced systematically to all healthcare providers involved in the medical setting. The next section explores how to introduce the change initiatives and use organizational change strategies to maximize the successful implementation of cardiac psychology practices.

CHAPTER 4

CREATING SUCCESSFUL ORGANIZATIONAL CHANGE INITIATIVES

Despite the utility and effectiveness of cardiac psychology assessment techniques selected, unless organizational change procedures have been considered, the change initiatives may have limited success. Despite the advantages of change efforts to organizations, employees frequently are hesitant to embrace them. This may be because employees are comfortable conducting business as usual and they may be concerned that changes will translate to less ideal working experiences and economic results (Aamodt, 2004). Organizational change management is also an important consideration because cardiac psychology is a new field and healthcare professionals will need to introduce significant changes to a hospital setting to fully integrate cardiac psychology practices into mainstream medicine.

Organizational Change Objectives

In order to create successful change efforts, an eight-step pattern is recommended from *The Heart of Change Field Guide* (Cohen, 2005). The eight-step process can be viewed in three phases: 1) creating a climate for change, 2) engaging and enabling the whole organization, and 3) implementing and sustaining the change. In phase 1 three steps are recommended: 1) increase urgency, 2) build guiding teams, and 3) get the vision right. Phase 2 involves the following steps: 4) communicate for buy-in, 5) enable action, and 6) create short-term wins. Finally, phase 3 emphasizes two steps: 7) don't let up and 8) make it stick.

The Heart of Change Field Guide (Cohen, 2005) was based on research by Kotter and Cohen (from Deloitte Consulting), who organized a team of individuals to conduct interviews in nearly one hundred organizations worldwide regarding change efforts. One of the most important findings in this research was the discovery that individuals were most motivated to change not only based on empirical facts or research, but based on influential experiences that altered the way they felt about the change initiative. As the research indicates, the eight-step path that leads to successful change initiatives initially focuses on how to create a sense of urgency and results in changing an organization's culture. Changing an organizational culture of a hospital is pivotal in realizing the successful implementation of cardiac psychology practices (Cohen, 2005).

While the organizational change process laid out here will be in logical, sequential steps, it is important to note that change is rarely a linear process (Cohen, 2005). It is rather an iterative process and may involve the implementation of steps out of sequence or several steps may be implemented simultaneously. Based on Cohen's research, each of the eight steps, however, are necessary. Mental health/behavioral health providers can be involved in all eight steps, but they may be most instrumental in the first step within the first phase by introducing mental health assessment and intervention practices to cardiologists and other health professionals within cardiology. Therefore, this first step in the organizational change process will be most heavily emphasized here.

Creating a Climate for Change

According to Denton (1996), in order to begin the organizational change efforts, it is first important to create a climate for change to occur (as cited in Aamodt, 2004, p.

448). Cohen (2005) asserts the usefulness of three primary steps in creating a climate for change, which include: 1) heightening urgency, 2) organizing guiding teams, and 3) establishing a sound vision. Before a behavioral health assessment and referral program can be introduced, it is recommended to assess what medical health providers are currently offering patients in terms of mental health assessment and referral, if they are addressing mental health needs at all.

Needs Assessment

A training needs assessment is the methodical analysis of an issue or new process, based on information gathered from multiple sources, which allows individuals to make informed decisions about training or other organizational needs (Rossett, 1987). A brief needs assessment can be conducted to determine to what extent healthcare providers are aware of psychological services for improvement of cardiac conditions and to what extent they are currently referring out for mental health services. The needs assessment may entail individual interviews and/or focus groups with physicians and other medical staff. Brief surveys may also be used in conjunction with interviews or in place of interviews with staff to determine the extent to which healthcare providers are aware of the role of psychology in cardiac wellness. An example of a survey used for a needs assessment is located in Appendix B. The results of the needs assessment will determine the type of education/training that health providers should be offered when making a business case for change.

Heightening Urgency: Step 1

When a leader of an organization resolves to undergo an organizational change effort, it is usually the case that practical plans, procedures, and logistics are the greatest priorities. Unless leaders prepare employees for change, the change projects may fail. While preparing staff for change may be a considerable investment of time and resources, without buy-in from staff, the change—even if initiated—may not be sustained. A prerequisite to gaining buy-in from staff is for staff members to realize the necessity of the organizational change—the introduction of cardiac psychology practices. In this phase, a business case for change should be made, to foster a sense of rational buy-in, but emotional buy-in is also crucial (Cohen, 2005).

To foster an organization-wide sense of urgency, an organization's leaders need to communicate the challenge of obtaining a competitive position in comparison to other hospitals. Medical staff also needs to realize that the organizational changes—integrating cardiac psychology practices into routine care—are part of an ongoing journey of change (Cohen, 2005). Specifically, three approaches are recommended to heighten a sense of urgency, which include: 1) establishing a rationale for change that indicates a significant difference between recent organizational outcomes and optimal organizational targets; 2) determining where motivations exist to keep the status quo; and 3) defining the duties of medical staff who will be involved in overseeing the change effort.

Making a Business Case for Change

According to Cohen (2005) a sensible business case for change in part involves convincing empirical evidence that the organization is not currently meeting its

performance goals and the resulting negative outcomes if the status quo is maintained. This empirical evidence may be gathered by comparing organizational outcomes to other hospital outcomes, documented in results of patient satisfaction surveys, and indicated by organizational failures. The Centers for Medicare & Medicaid Services (CMS) publishes useful data that a hospital can use to determine whether their organizational outcomes are comparable or significantly different from the national median rates. Just as important as a rational case for change is the emotional case for change. An emotional case for change can be made with motivational stories or pictures that inspire people, convincing them of the necessity of the proposed organizational changes (Cohen, 2005). Appendix C contains an assessment tool to build a case for change. This survey tool can be deployed to medical staff involved in the development of a mental health assessment and referral program. It lists questions that can yield information used to build a rational and emotional case for change.

Many cardiac patients and physicians lack a strong motivation to pursue psychological treatment as part of their medical treatment. Additionally, while much psychological research has focused on identifying the risk factors implicated in cardiovascular disease, continued research is needed with respect to successful psychological treatment for cardiac rehabilitation programs (Allan, 2012). Nevertheless, compelling evidence suggests that numerous cardiac patients identified with psychosocial risk factors can benefit from mental/behavioral health interventions.

To make a sound business case for change to medical professionals, Dr. Au (internal medicine physician and assistant professor at Loma Linda University) recommended providing evidence that behavioral health services can lead to the

following outcomes: 1) shorter hospital stays, 2) decreased mortality, and 3) decreased 30 day readmissions (personal communication, July 26, 2015). The Hospital Readmissions Reduction Program mandates the Centers for Medicare & Medicaid Services (CMS) to decrease financial awards to IPPS hospitals with significantly elevated rates of patient readmissions. The Hospital Readmissions Reduction Program was enforced starting October 1, 2012, established by section 3025 of the Affordable Care Act and section 1886(q) of the Social Security Act (Centers for Medicare & Medicaid Services, 2014). The aforementioned outcomes of shorter hospital stays, decreased mortality, and decreased 30 day readmissions would be ideal because they translate to increased revenue, decreased cost, as well as increased patient health and well-being.

Evidence suggests that behavioral health care can have favorable outcomes considering the aforementioned high priority outcomes. For example, reviewing the 30-day readmission rates across different hospitals in the U.S., revealed an approximate 19% hospital readmission rate from 2007 to 2011 (Gerhardt, 2013). One randomized controlled trial examined the effects of a 3-month Integrated Telehealth Education and Activation of Mood (I-TEAM) intervention in patients with chronic health conditions (i.e., congestive heart failure, chronic obstructive pulmonary disease) and depression. The I-Team intervention involved a nurse assessing individuals every day regarding symptoms, body weight, and medication adherence. Participants in the intervention group received eight problem-solving interventions across eight weeks targeting depression, and antidepressants from the primary care physicians. Control patients were provided the usual care inclusive of in-home nursing as well as psychoeducation. Results indicated that at 3 and 6 months after the study began, the individuals who participated in the I-

Team intervention gained problem-solving skills and confidence in handling their health, had a 50% reduction in depression compared to the control group, and had significantly less frequent encounters in the emergency department. While the intervention group participants did not experience less time in the hospital overall at a year follow-up, the fact that depressive symptoms had diminished and that patients had less emergency department encounters is noteworthy (Gellis, Kenaley, and Have, 2014).

Due to the fact that cardiac psychology is a growing field, psychosocial interventions to deter and treat CVD are still needed (Allan, 2012). However, mental health interventions in a primary care setting have demonstrated significant improvement in mental and physical health outcomes based on 10 systematic reviews (Kessler, 2012). Moreover, clinical trials related to individual therapy, group therapy, antidepressant medication, Transcendental Meditation, and lifestyle modification (e.g., with respect to exercise, stress management, and a vegetarian diet low in fat and cholesterol) have demonstrated effectiveness in the treatment of CVD (Allan, 2012). Additionally, with significant lifestyle change—including smoking cessation, the adoption of a vegetarian diet, daily yoga and meditation practice, exercise several times per week, and attendance at support groups—it was discovered that CHD could be reversed (Gould et al., 1995; Ornish et al., 1990 as cited in Allan, 2012).

Recent research suggests that intervention for depression helps improve adherence to health behaviors. Patients with depression who were hospitalized due to acute coronary syndrome, heart failure, or arrhythmia participated in a randomized trial of "collaborative care depression management." At baseline, 6 weeks, 12 weeks, and 6 month time points, a decrease in depressive symptoms (as indicated by the Patient Health

Questionnaire-9) related significantly to a self-reported measure of adherence to medications as well as other health behaviors (Bauer et al., 2012).

Finally, psychological interventions for depressed patients with CHD have proven effective to treat depression, especially cognitive-behavioral therapy and problem-solving therapy (Tully & Higgins, 2014). According to a review of research, medications—especially the selective serotonin reuptake inhibitors (SSRIs)—have also provided a modest, but meaningful effect for the management of depressive symptoms compared to placebo (Baumeister, Hutter, & Bengel, 2011). While psychological interventions and psychotropic medication (e.g., SSRIs) have demonstrated effectiveness in treating depression in patients with CAD, research has demonstrated mixed results regarding the relationship of depression treatment on cardiac mortality outcomes overall. In one study, recovery from depressive symptoms corresponded to a decreased cardiac mortality rate for MI patients with mild levels of depression (but not for those with moderate to severe levels of depression) (Lespérance, Frasure-Smith, Talajic, & Bourassa, 2002). A recent review has not indicated a significant advantage of depression treatment on decreasing mortality rates and cardiac events for those with CAD (Baumeister, Hutter, & Bengel, 2011). However, randomized controlled trials with these findings involve screening for depression and random assignment of participants, rather than psychological treatment that was desired and actively pursued by patients or providers, which may impact the true relationship of depression treatment on cardiac mortality outcomes (Tully & Higgins, 2014). More research is needed to clarify whether treatment for depression has an impact on mortality rates.

Psychologists and other mental/behavioral healthcare providers can advocate for psychological interventions to management in a medical setting, using the aforementioned business case for change. In order to start the change process, the management team members will likely need to take on primary roles in endorsing the mental health screening and referral program, so that they can educate others in the organization and gather support. Once momentum for the change process is underway, organizational leaders can target greater numbers of individuals in the organization to educate about the mental health screening and referral program. Furthermore, education of the change initiative needs to be continual rather than a one-time training (Cohen, 2005).

Organizational Change: Steps 2-8

Once the clinical psychologist or other professional has proposed a case for change and organizational leaders have sufficiently supported the change by increasing urgency and inspiring others to welcome the change initiatives (namely, the psychological assessment and referral program), the management team can create guiding teams (step 2) to guide the organization in the change effort regularly. The guiding team can appropriately direct others with the right vision (step 3) by asking what change is paramount, clarifying the vision for the organization moving forward, researching what elements of success the organization has attained that do not need to be altered to fit the vision, and how the vision can be manifested (Cohen, 2005).

The next step in the change process is to inspire as many members of the organization as possible to implement the necessary changes for mental health

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assessment and referral (step 4). By identifying and eliminating obstacles to the change

process, staff can be mobilized to enact the mental health assessment and referral

program. These obstacles typically include "organizational structure, lack of skills,

organizational systems, and resistant leaders and managers" (Cohen, 2005, p. 118) (step

5). Short-term objectives should be achieved, to maintain the change and ensure the

success of the mental health assessment and referral process (step 6). These "short-term

wins" should be: achievable within a reasonable timeframe, worthwhile to medical staff,

and valid to the change efforts. It may be helpful for medical staff to see patients less

depressed or have improved health outcomes shortly after mental health assessment and

referral.

When medical staff members witness the short-term gains they have made with

the screening instruments and referral process, they may be inspired to continue assessing

and referring patients to mental/behavioral health services. However, at this point in the

change process, the management team may become satisfied and complacent with the

organizational changes, rather than involve themselves further in the change process.

Step 7 entails organizational leaders continuing to communicate their motivation and

endorsement of the organizational changes, in order to maintain the success of the

mental/behavioral health assessments and referrals. Lastly, in step 8, to make a relatively

permanent change to the organization, the organizational changes will need to be adopted

and continually supported by the organizational culture. This cultural transformation can

in part be achieved when leaders embrace mental/behavioral assessment and intervention,

serve as examples of engaging in the change process, and reward others in the

organization who have enacted the organizational changes successfully (Cohen, 2005).

Psychologists and other behavioral health professionals can serve supportive roles across all the steps of organizational change, by assisting management in championing behavioral health interventions. Psychologists and other behavioral health professionals can play a pivotal role in making the case for psychological interventions and co-constructing a new organizational culture. Especially when medical providers are under significant time pressure to perform their respective duties, they may be resistant to employing psychological assessment, intervention, and/or referrals because of the extra time investment this requires. However, if they have a clear understanding of the role of psychology in benefiting patient outcomes, they may come to embrace the extra time investment of assessing and referring their patients to mental/behavioral health services.

CHAPTER 5

CONCLUSIONS

According to the experience of a renowned clinical psychologist who treats cardiac patients (Dr. Allan), many cardiac patients and physicians are not invested in the process of addressing psychological factors in their treatment (Allan, 2012). Additionally, while much psychological research has focused on identifying the risk factors implicated in cardiovascular disease, continued research is needed with respect to successful psychological treatment for cardiac rehabilitation programs. Nevertheless, there is compelling evidence that numerous cardiac patients identified with psychosocial risk factors, can benefit from mental/behavioral health interventions.

As cardiac psychology is a new field, it is the hope of this project to bridge the theory-to-practice gap and enhance interdisciplinary collaboration. Screening for social/emotional risk factors related to cardiovascular disease—especially depression— has been recommended by the American Heart Association (Lichtman et al., 2008), yet mental/behavioral health screening, treatment, and referral has not been completely adopted by all medical staff working with cardiology patients (Feinstein, 2006). In order to create successful change efforts, it is recommended that medical staff use an eight-step pattern for leading change in organizations proposed by *The Heart of Change Field Guide* (Cohen, 2005). This eight-step process initially focuses on how to create a sense of urgency and results in changing an organization's culture.

Psychologists and other mental/behavioral health professionals can be particularly instrumental in making the case for change within medical practices to initiate the change process. If organizational leaders are strongly interested in pursuing a mental/behavioral

health screening and referral program, psychologists and/or other related clinicians can

serve supportive roles in creating enduring organizational changes. Changing the

organizational culture of a hospital is pivotal in realizing the successful implementation

of cardiac psychology practices.

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Appendix A

Medical Conditions Producing Psychological Symptoms

Mental symptoms are not frequently caused by medical conditions; however, certain medical conditions can cause mental symptoms. The table below depicts a listing of medical conditions that can cause depressive and anxious symptoms (Morrison, 1997). Medical conditions that could be the source of mental disorders should be ruled-out before a mental health referral is made.

Table 1. Mental disorders potentially produced by medical conditions.

Mental Disorders	Medical Conditions
Depression	Seizure Disorders (Epilepsy)
	Diabetes
	Hypothyroidism
	Hyperthyroidism
	Hypoparathyroidism
	Hyperparathyroidism
	Multiple Sclerosis
	Stroke
	Brain Trauma
	Porphyria
	Wilson's Disease
	Lyme Disease
	Syphilis
	Pellagra
	Huntington's Disease
	Parkinson's Disease
	Cancer of the Pancreas
Anxiety	Lung Cancer
	Mitral Valve Prolapse
	Cardiac Arrhythmias
	Chronic Obstructive Lung Disease
	Ménière's Syndrome
	Diabetes
	Fibromyalgia
	Hyperparathyroidism
	Hyperthyroidism
	Lyme Disease
	Anemia
	Pheochromocytoma
	Porphyria
	Premenstrual Syndrome

Appendix B

Behavioral Health Needs Assessment

1. **How satisfied are you with patient outcomes following medical treatment for cardiovascular disease?**

Very Dissatisfied	Dissatisfied	Neither Satisfied nor Dissatisfied	Satisfied	Very Satisfied
1	2	3	4	5

2. **How often do you refer patients to other health providers in the treatment of cardiovascular disease?**

Always	Often	Sometimes	Seldom	Never
1	2	3	4	5

3. **To what extent do you consider psychological factors (e.g., depression, anxiety) in the assessment and treatment of patients with cardiovascular disease?**

Not at All	To a Little Extent	To Some Extent	To a Great Extent	To a Very Great Extent
1	2	3	4	5

4. **To what extent do you currently refer your patients out for mental health services?**

None at All	To a Little Extent	To Some Extent	To a Great Extent	To a Very Great Extent
1	2	3	4	5

5. **For which mental health conditions do you make referrals, if at all?**

☐ Depressive Disorders
☐ Anxiety Disorders
☐ High Level of Distress
☐ Trauma- and Stressor-Related Disorders (e.g., PTSD)
☐ Schizophrenia and Other Psychotic Disorders
☐ Bipolar and Related Disorders

- ☐ Somatic Symptoms and Related Disorders
- ☐ Eating Disorders
- ☐ Substance-Related and Addictive Disorders
- ☐ Relational Problems
- ☐ Suicidal or Homicidal Tendencies
- ☐ None
- ☐ Other (please specify)

  _____

6. **Do you use a formal or standardized mental health screening tool or assessment?**

No	Yes
1	2

7. **For which conditions do you think mental health services can be beneficial? Check all that apply:**

- ☐ Smoking cessation
- ☐ Obesity/overweight
- ☐ Diet change
- ☐ Adherence to medication
- ☐ Stress
- ☐ Depression
- ☐ Anxiety
- ☐ Hostility (anger, cynicism, and mistrust)
- ☐ Pessimism
- ☐ Low social support
- ☐ Relational discord
- ☐ At risk of harming self and/or others
- ☐ Other (please specify)

  _____

8. **To what extent do you think the above factors (in item 7) influence disease and illness?**

None at All	To a Little Extent	To Some Extent	To a Great Extent	To a Very Great Extent
1	2	3	4	5

9. **To what extent do you believe that mental/behavioral health services can positively influence health outcomes in the treatment of cardiovascular disease?**

None at All	To a Little Extent	To Some Extent	To a Great Extent	To a Very Great Extent
1	2	3	4	5

10. **What is your professional background?**

☐ Nurse practitioner
☐ Registered nurse
☐ Cardiologist
☐ Physician assistant
☐ Vascular surgeon
☐ Cardiothoracic surgeon
☐ Other _____

Appendix C

Assessment Tool to Build a Case for Change*

Case for Change Assessment
I. Current Organizational Performance Outcomes Versus Organizational Goals
• What are your current patient outcomes? (# of hospital visits, # of recurrent cardiac events, emotional and physical well-being measurable outcomes) • What are the current organizational objectives for patient outcomes? • What are the gaps between current patient outcomes and organizational target objectives? • To what extent do the organizational change initiatives play a role in helping the organization meet target objectives?
II. Current Comparative Status
• Which hospitals are the most highly rated, with top performing cardiology services? • How does your cardiology practice compare to the most highly rated cardiology services at other hospitals?
III. Organizational deficiencies and weaknesses
• What practices within cardiology are resulting in unfavorable outcomes? • What opportunities are not being taken advantage of that could improve service delivery and patient outcomes?
IV. Trends
• Which industry trends are driving new needs for cardiology services? (e.g., lowering the incidence of 30-day readmissions) • Which economic trends are influencing new needs to be addressed by cardiology services? (e.g., cost of hospitalization)
V. Testimony
• What patients, medical staff, and other individuals can provide accounts of their experiences of the change initiatives, which may motivate others? • What information can these individuals provide that may highlight the benefits of the change initiatives?
VI. Raising the Sense of Urgency
• What are the staff members' values? • What are the underlying motives and emotions of staff members who are supporting the status quo rather than the change initiatives? • What final steps are required to raise the sense of urgency?

*Note: Adapted from the *Heart of Change Field Guide* (Cohen, 2005)