Psychological Needs, Assessment, and Treatment in the Care of Adults with Congenital Heart Disease

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KEYWORDS

• Congenital heart disease • Emotional distress • Depression • Anxiety • Medical trauma • Treatment

KEY POINTS

- Congenital heart disease survivors are at risk for declining emotional well-being as they age.
- Neurocognitive deficits, physical and emotional repercussions of invasive treatments, and declines in physical functioning over time contribute to emotional distress.
- Brief self-report measures can be used to identify symptoms that warrant further evaluation.
- Psychotherapy, pharmacotherapy, or a combination of both are common treatment options.

Medical advancements have prolonged the lives of congenital heart disease (CHD) survivors as evidenced by more adults currently living with CHD than children.[1] Now that these individuals are living longer, they are also encountering the stressors associated with having a chronic medical condition. This circumstance requires health providers to not only consider the cardiac health of CHD survivors, but also their emotional well-being. For the general population, emotional well-being is an independent risk factor for morbidity and mortality, including the occurrence of cardiac events.[2] Among individuals who have acquired heart disease, the connection between emotional well-being and cardiac health is even more pronounced,[3–5] highlighting the importance of addressing symptoms of emotional distress alongside cardiac follow-up. Emotional well-being represents a continuum that ranges from normative levels of occasional distress experienced by most everyone to symptoms of psychopathology that meet criteria as set forth by the *Diagnostic and Statistical Manual of Mental Disorders* (DSM). Therefore, optimal health care for CHD survivors is achieved when symptoms of emotional distress can be identified and the appropriate referral resources are accessible by the teams caring for these patients.

CHD survivors have several risk factors for declining emotional well-being as they age, and several key ones are shown in **Fig. 1**. These individuals are more likely to experience a cardiac-related event or hospitalization as they age owing to their cardiac lesion or previous interventions.[6,7] Additionally, CHD survivors who have had multiple surgeries and/or have complex disease are at greater risk for neurocognitive deficits.[8,9] Neurocognitive sequalae can contribute to poorer emotional well-being owing to difficulty with executive functions,[9] which are associated with poorer coping[10] and result in an increased risk of developing psychiatric disorders, such as depression and attention deficit hyperactivity disorder.[11] CHD survivors may also

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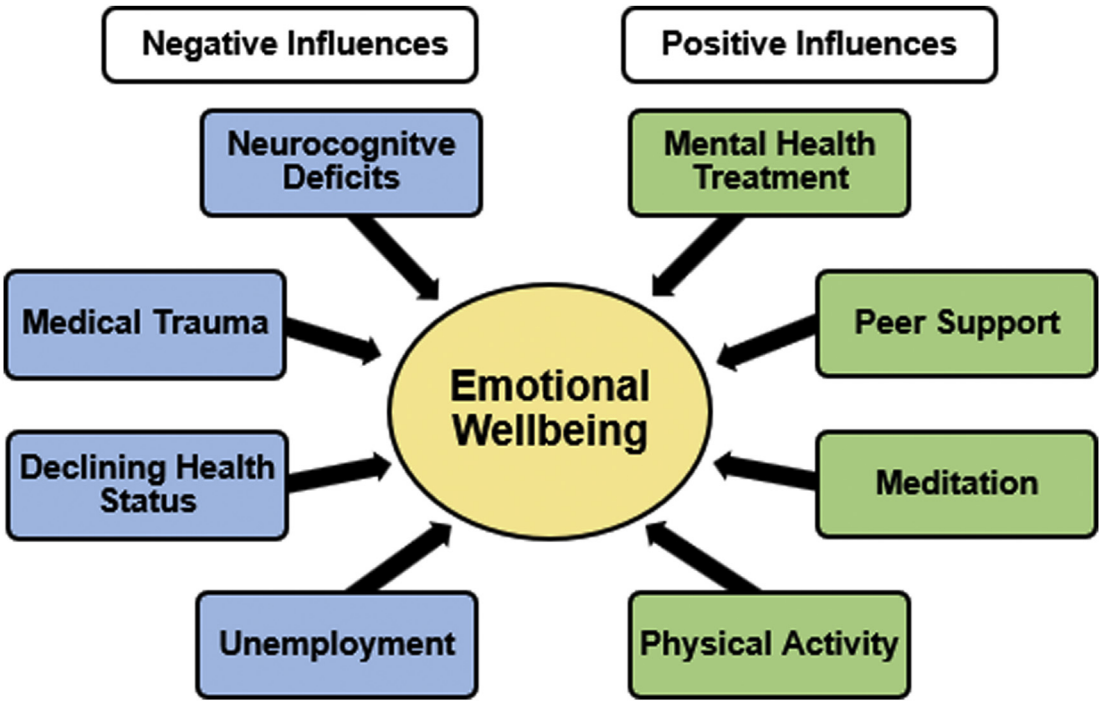

Fig. 1. Negative and positive influences on the emotional well-being of CHD survivors.

experience lasting repercussions from the invasive interventions that are needed to repair or palliate the cardiac lesion. Surgeries can result in significant scarring,[12] recurring chest pain,[13] and the development of arrhythmias.[14] Last, CHD survivors are more likely to experience declining health status at younger ages compared with the general population, and may thus be less capable or perceive themselves as less capable of engaging in peer-appropriate activities.[15,16]

Primary care and cardiology teams may be the first line of defense in recognizing and providing a referral for symptoms of emotional distress. Therefore, the purpose of the current review is to offer health providers information about the psychological needs specific to CHD survivors, identification measures that can be implemented in a clinic setting, and treatment modalities for consideration when developing referral resources.

PSYCHOLOGICAL NEEDS

Stress

Descriptions of disease-related stress for CHD survivors are often reported in anecdotal terms. However, 1 study found that the following items were commonly endorsed as being at least somewhat stressful by adult CHD survivors: the presence of scars from invasive treatments, not being able to engage in activities in which other people of a similar age engage, and being uncertain about their future health.[17] Within this sample, adolescents (15–18 years of age) reported significantly less disease-related stress than young adults (19–39 years of age). Furthermore, participants with some degree of functional impairment, as denoted by their New York Heart Association (NYHA) functional class (II–IV), endorsed significantly higher levels of disease-related stress compared with participants without functional impairment (NYHA functional class I). The authors concluded that disease-related stress may increase as CHD survivors age and is associated with symptoms of psychopathology and poorer health-related quality of life. Although there is a dearth of longitudinal studies on changes in emotional well-being over time among CHD survivors, one may assume that disease-related stress is a risk factor for the development of symptoms of psychopathology, especially if there is a decline in functional status.

Clinically Significant Emotional Distress

CHD survivors have elevated rates of psychiatric disorders compared with the general population, particularly major depressive disorder (MDD) and anxiety disorders.[18] The diagnosis of a psychiatric disorder negatively impacts quality of life among adult CHD survivors, even when the symptoms

are mild.[19] Moreover, depressive and anxiety symptoms, which share cognitive (eg, difficulty concentrating) and somatic (eg, sleep disturbance) elements, often co-occur among adults with CHD.[20]

Numerous demographic, psychosocial, and clinical correlates of emotional distress among adult CHD survivors have been identified. With respect to demographic factors, female sex,[20–22] older age,[20,21] and lower socioeconomic status[20–22] are associated with elevated depressive and anxiety symptoms. Clinical factors, including impaired NYHA functional class,[21] poor exercise capacity,[22] a greater number of cardiac procedures,[23] and greater medical comorbidity[20] have also been linked with poorer emotional functioning. Lesion complexity (ie, simple vs moderate vs complex), however, has an inconsistent relationship with emotional distress.[24] A meta-analysis found that CHD survivors with moderate lesions reported less emotional distress compared with healthy controls,[25] whereas another study reported that individuals with moderate and complex lesions were more likely to have an anxiety disorder than those with simple lesions.[23] Inconsistencies in the relationship between the traditional lesion complexity classification and emotional distress may be due to the vast heterogeneity in the moderate lesion category. The recently published and more nuanced classification system that incorporates a patient's physiologic stage (eg, NYHA functional class, hemodynamic sequelae, and presence of arrhythmias)[26] may better delineate a patients' current disease severity for use in research studies.

Importantly, emotional distress has been identified as a predictor of health care use and adverse medical outcomes. Individuals with depression and/or an anxiety disorder have a greater number of primary care, cardiology, and emergency department visits, in addition to more hospitalizations.[20] Adolescent and adult CHD survivors with increased depressive symptoms have shorter event-free survival, as well as double the risk of experiencing a major adverse cardiovascular event during a 5-year observation period.[27] Furthermore, a diagnosis of depression and/or anxiety was associated with higher mortality risk among adult CHD patients.[20]

Symptoms of Medical Trauma

CHD survivors are exposed to various stressful medical events that have the potential to precipitate traumatic stress responses. The results of 1 study suggest that more than one-half of CHD survivors report experiencing a medically traumatic event, including cardiac surgery, and one-third of CHD survivors who have undergone cardiac surgery identify the experience as traumatic.[28] This perception of medically traumatic events suggests that CHD survivors may be at risk for posttraumatic stress disorder (PTSD). PTSD is characterized by intrusion, avoidance, and hyperarousal symptoms, as well as alterations in mood and cognition that arise in response to a traumatic stressor.[29] For CHD survivors, posttraumatic stress may present as nightmares about distressing aspects of treatment (intrusion), noncompliance with medical treatment (avoidance), and heightened monitoring and catastrophic interpretation of physical symptoms (arousal).[30]

PTSD among adult CHD survivors is understudied, with a small number of investigations reporting the prevalence and correlates of PTSD in this population. Rates of PTSD among CHD survivors range widely from 3% to 52%.[18,28,30,31] CHD survivors with a history of cardiac surgery[28,31] and stroke[28] are more likely to meet the criteria for PTSD than other CHD survivors. Moreover, earlier age at cardiac surgery is associated with PTSD,[28] suggesting that cardiac surgery has long-term effects on emotional well-being.

ASSESSMENT OF EMOTIONAL DISTRESS

The gold standard for determining whether symptoms of emotional distress meet the formal criteria for a psychiatric disorder is by conducting a structured clinical interview. Available research versions of structured interviews require extensive training and can vary in length depending on the number of mental disorders being assessed (30–180 minutes). A clinical interview is important in clarifying a diagnosis, although is not necessary for identifying individuals who should be referred for mental health services. Many patients will self-identify as experiencing psychological distress and thus seek mental health referrals. In addition, there are many self-report measures available that can be administered quickly with minimal training in an outpatient clinic setting. The administration of such measures may facilitate the recognition of clinically significant emotional stress and trigger discussion with patients about possible mental health referrals.

The adverse effects of emotional distress on psychosocial and physical functioning among adults with CHD highlight the importance of routine assessment of depressive and anxiety symptoms. Encouragingly, 70% of cardiologists

express willingness to implement a self-report measure to identify depression in their patients.[32] Individuals with acquired heart disease tend to follow-up on recommended health care after depression and anxiety screening[33]; therefore, increased implementation of self-report measures that identify emotional distress may enhance care for adults with CHD.

The following are commonly used self-report measures that have cutoff scores to help make determinations about the degree of psychological distress, and thus consideration for mental health services. Many of these measures have been administered in studies investigating psychological outcomes in CHD. See **Table 1** for additional details about the self-report measures described elsewhere in this article. All instruments are brief and take approximately 5 minutes or less to complete.

Symptoms of Emotional Distress

Beck Anxiety Inventory

The Beck Anxiety Inventory[34] has been used infrequently to measure anxiety in CHD survivors, but the Beck Anxiety Inventory is quick to administer and can be easily scored.

Beck Depression Inventory – Second Edition (BDI – II)

Westhoff-Bleck and colleagues[19] found that the Beck Depression Inventory – Second Edition,[35] detected MDD with a sensitivity of 75% and a specificity of 90%. Although the Beck Depression Inventory – Second Edition has multiple strengths, because it contains a question about suicidal ideation it might require prompt review to determine whether urgent further assessment by a mental health professional is indicated.

Center for Epidemiologic Studies Scale - Depression

The Center for Epidemiologic Studies Scale - Depression[36] was found by Moon and colleagues[37] to detect the presence of depressive and anxiety disorders among adults with CHD, with sensitivity ranging from 73% to 87% and specificity ranging from 60% to 80%. The Center for Epidemiologic Studies Scale - Depression may be readily implemented in a clinic setting.

Generalized Anxiety Disorder Questionnaire – 7

The Generalized Anxiety Disorder Questionnaire – 7[38] has a sensitivity and specificity of 89% and 82%, respectively, among primary care patients.[38] Tablet-based administration of the Generalized Anxiety Disorder Questionnaire – 7 is acceptable to patients presenting to a variety of outpatient clinics.[39]

Hospital Depression and Anxiety Scale

The Hospital Depression and Anxiety Scale[40] contains depression (HADS-D) and anxiety (HADS-A) subscales. For adults with CHD, the HADS-D has a sensitivity of 76% and a specificity of 92% for identifying MDD. Strengths of the HADS are that it measures more than 1 component of emotional distress with a relatively small number of items and was developed specifically for medical populations.

Patient Health Questionnaire – 9

The Patient Health Questionnaire – 9 (PHQ-9)[41] functions as an indicator of both probable depression diagnosis and symptom severity, although the severity classification system has greater sensitivity as compared with the diagnostic algorithm.[42] Among primary care patients, the PHQ-9 has a sensitivity of 88% and a specificity of 88% for identifying MDD.[41] Of note, 2.2% of adult CHD survivors endorsed the suicidal ideation and self-harm item,[39] indicating that the PHQ-9 may be best implemented in clinic settings with access to a mental health professional. Tablet-based administration of the PHQ-9 has proven acceptable to medical outpatients.[39] Another benefit of the PHQ-9 is the availability of proposed treatment actions that correspond to severity scores, which may assist with decisions regarding referral (ie, score of 5–9 suggests watching, waiting, and reassessment; and a score of $\geq$10 suggests that treatment is needed).[43]

Symptoms of Medical Trauma

Because there is no available measure of posttraumatic stress specific to medical trauma, self-report measures commonly used in other trauma-exposed populations have been used to assess PTSD in CHD survivors. Of note, the observed prevalence of PTSD seems to vary as a function of the selected screening instrument, though this trend also affects assessment of PTSD in healthy populations. For example, two studies have compared rates of PTSD among adult CHD survivors and healthy adults, and neither study found a difference in prevalence between the two populations (2.7% vs 2.4% and 52.3% vs 48.4% for CHD survivors and healthy adults, respectively).[18,31] PTSD measures are included in **Table 1** and are described elsewhere in this article with an emphasis on their usefulness to assess PTSD diagnostic criteria according to fifth edition of the DSM (DSM-5).[29]

Table 1
Commonly used measures of emotional distress

Assessment Tool	Description	No. of Items	General Population: Clinical Cutoff/Severity Classification	CHD-Specific Clinical Cutoff (Mean ± SD)	Fee for Use?
Depression specific					
Beck Depression Inventory – Second Edition (BDI-II)	Severity of affective, cognitive, and somatic depressive symptoms over the past 2 wks	21	≥16 = presence of MDD	>11 = MDD 7.7±8.7[19]	Yes
Center for Epidemiologic Studies Scale – Depression (CES-D)	Frequency of affective, cognitive, and somatic depressive symptoms over the past week	20	≥16 = presence of MDD	≥18 = depressive/ anxiety disorder[37] 18.4±5.9[37]	No
Patient Health Questionnaire – 9 (PHQ-9)	Frequency of affective, cognitive, and somatic depressive symptoms over the last 2 wks	9	≥10 = presence of MDD ≤4 = minimal 5–9 = mild 10–14 = moderate 15–19 = moderately severe ≥20 = severe	6.6% had probable MDD based on diagnostic algorithm[39] 5.5% score ≥10[39]	No
Anxiety specific					
Beck Anxiety Inventory (BAI)	Severity of affective and somatic anxiety symptoms over the past week	21	≥7 = minimal 8–15 = mild 16–25 = moderate ≥ 26 = severe	19% score ≥16[70]	Yes
Generalized Anxiety Disorder Questionnaire – 7 (GAD-7)	Frequency of generalized anxiety symptoms over the past 2 wks and degree of impairment	7	≥10 = presence of GAD	17% score ≥10[39]	No
Anxiety and depressive symptoms					

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Table 1
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Assessment Tool	Description	No. of Items	General Population: Clinical Cutoff/Severity Classification	CHD-Specific Clinical Cutoff (Mean ± SD)	Fee for Use?
Hospital Anxiety and Depression Scale (HADS)	Frequency and severity of depressive and anxiety symptoms over past week	14	8–10 = mild 11–14 = moderate 15–21 = severe	HADS-D: >5 = MDD[19] HADS-A: 9.2±4.4[71]	Yes
PTSD symptoms					
Impact of Events Scale – Revised (IES-R)	Severity of intrusion, avoidance, and hyperarousal symptoms over the past 7 days	22	≥33 = presence of PTSD	11% score ≥33[28]	No
Posttraumatic Diagnostic Scale (PTDS)	Frequency of intrusion, avoidance, and hyperarousal symptoms over past month	17	≤10 = mild 11–20 = moderate 21–35 = moderate to severe ≥36 = severe	52% had probable PTSD based on diagnostic algorithm[31] 14.2 ± 11.1[31]	Yes
PTSD Civilian Checklist Version (PCL-C)	Severity of intrusion, avoidance, hyperarousal, cognitive, and affective symptoms during the past month	17	≥44 = presence of PTSD	21% score ≥44[28]	No

Abbreviations: GAD, generalized anxiety disorder; SD, standard deviation.

Impact of Events Scale – Revised

The Impact of Events Scale – Revised (IES-R)[44] has a sensitivity of 91% and a specificity of 82% for diagnosing PTSD. One advantage of the IES-R is that clinicians and researchers are able to specify the traumatic stressor, making the IES-R a good candidate for the assessment of cardiac-specific trauma. Moreover, despite changes in PTSD diagnostic criteria by the DSM-5, the IES-R continues to be considered a useful measure of posttraumatic stress.[45]

Posttraumatic Diagnostic Scale

According to its diagnostic algorithm, the Posttraumatic Diagnostic Scale (PTDS)[46] provides a sensitivity of 89% and a specificity of 75%. A symptom severity score may also be derived. The PTDS has been revised to reflect DSM-5 changes in the diagnostic criteria for PTSD,[47] but this measure has not yet been used to examine posttraumatic stress among CHD survivors. Compared with other self-report measures, the PTDS is more complicated to score. However, it assesses impairment related to posttraumatic stress, a consideration that is omitted by other brief screening instruments.

PTSD Checklist Civilian Version

The PTSD Checklist Civilian Version (PCL-C)[48] has a sensitivity of 94% and a specificity of 86% for diagnosing PTSD. The PCL-C has been revised to reflect the PTSD criteria outlined in the DSM-5 (PCL-5).[49] The scores on the PCL-5 and PCL-C are strongly correlated,[49] but the PCL-5 has yet to be used among CHD survivors.

TREATMENT OF EMOTIONAL DISTRESS

Several options are available to address symptoms of emotional distress, some of which are shown in **Fig. 1**. The most common options include psychotherapy, which is also known as "talk therapy," and pharmacotherapy, including antidepressant and anxiolytic medications. This review also briefly summarizes additional treatment modalities that can be considered. It is important to note that there is a paucity of research on these interventions among adult CHD survivors. However, many of these treatments have been studied with adults with acquired heart disease, who may share some similarities as those with complex CHD in functional limitations and uncertainty about the progression of their condition.

In 2009, Kovacs and colleagues[50] surveyed 155 adult CHD survivors about their history and interest in mental health treatment. Approximately 51% of respondents reported interest in receiving psychological treatment for at least 1 area (eg, stress management, coping with a cardiac condition, mood/anxiety management). Furthermore, 41% expressed interest in receiving psychotherapy alone, 9% preferred pharmacotherapy alone, 34% reported that either option would be acceptable, and 16% were uninterested in either option. Therefore, a majority of adult CHD survivors are amenable to receiving treatment and are amenable to either psychotherapy or pharmacotherapy.

Psychotherapy

Psychotherapy (talk therapy) is an effective form of treatment for symptoms of emotional distress in the general population. For those with acquired heart disease, psychotherapy often includes a combination of education, cognitive restructuring (ie, examining and challenging dysfunctional thoughts), relaxation training, and/or improving stress management skills. Richards and colleagues[51] conducted a systematic review of psychological interventions for individuals with acquired heart disease, which reported small to moderate improvements in depressive and anxiety symptoms, as well as a positive effect on cardiac mortality. Another systematic review and meta-analysis found that psychological interventions resulted in improved depressive symptoms and social support, though did not decrease anxiety symptoms.[52] The interventions included in these reviews varied widely in treatment length, type of personnel delivering the intervention, and current level of depression and anxiety symptoms.

Research on the effectiveness of psychotherapy interventions for adult CHD survivors is scarce. Promising preliminary results from a pilot randomized clinical trial examining the efficacy of a cognitive–behavioral protocol for treating depressive and anxiety symptoms among adults with CHD indicated decreases in depressive and anxiety symptoms.[53] The intervention incorporated psychoeducation on living with CHD and cognitive–behavioral techniques including relaxation training, cognitive restructuring, and self-awareness training. Ferguson and Kovacs[54] also presented findings on integrating psychology service as part of an adult CHD outpatient clinic using a general cognitive-behavioral framework, and reported that 88% of the patients who received psychological treatment after referral by their cardiologist reported reduced or no emotional distress after treatment. Although these studies have shown promise for psychotherapy among adult CHD survivors, additional research is needed to determine the impact of psychotherapy on

Table 2
Benefits (+) and drawbacks (−) of psychotherapy and pharmacotherapy

	Psychotherapy	Pharmacotherapy
Expense	+ A specified number of outpatient therapy sessions are covered by most insurances. − However, not all therapists accept all forms of insurance and there may still be high copay fees.	+ Antidepressants are typically covered by most insurances. + Medication is typically inexpensive, though total cost depends on the duration of use.
Side effects	+ Although some may experience a temporary exacerbation of emotional distress when beginning therapy, it is typically short lived.	− Medication side effect profiles can interfere with adherence. Initial side effects may subside after a few weeks of adjusting to the medication. − Sudden discontinuation of antidepressants can result in significant side effects. Patients are advised to slowly titrate off of a medication under the supervision of the prescriber.
Ease of access	− Access to individuals providing psychotherapy can be limited in certain communities. Patients should consult their insurance to determine which providers are considered in network. − Providers may have varying degrees of familiarity with the needs of individuals with cardiovascular conditions.	+ Many primary care physicians are willing to prescribe and manage antidepressant medications. − Some mental disorders require significant medication management (eg, bipolar disorder and schizophrenia), and should be monitored by a psychiatrist. Psychiatrists are less available in certain communities and may have long wait lists. − Providers may have varying degrees of familiarity with the needs of individuals with cardiovascular conditions.
Convenience	− Some may need to travel a significant distance to a provider and appointments are traditionally held weekly. − Appointments are 50–60 min and typically occur during normal business hours, which may not be feasible for all patients.	+ Filling and picking up a prescription is convenient for many people.
Treatment duration	+ Duration of psychotherapy is often discussed in the early stages of treatment and is commonly $\geq$8 sessions.	− Duration of medication varies, but could last $\geq$1 y.
Treatment effect sustainability	+ Psychotherapy addresses current symptoms of emotional distress and provides tools for recurrence prevention.	− Symptoms of emotional distress may return when medication is discontinued.

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Table 2
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	Psychotherapy	Pharmacotherapy
Patient experience	– Improvement in symptoms takes time. + Strategies are learned to reduce the likelihood of symptom recurrence. – Some patients may have negative perceptions about psychotherapy owing to stereotyped portrayals in the media. – Patient–provider relationship is important for participation in psychotherapy, therefore changing providers may disrupt treatment progress. + Patient–provider relationship is a powerful tool alone, irrespective of the type of psychotherapy.	– Improvement in symptoms takes time, with the exception of anxiolytics used to treat physiologic symptoms of panic. – Not uncommonly, multiple medications are sequentially trialed before symptoms are optimally reduced. – Symptoms may return once medication is discontinued. – Patients who are already taking medications for other health needs may be hesitant to add another. + If care must be reestablished (eg, after a move), prescriptions can be easily transferred to another pharmacy, though finding a new prescriber may be more challenging.

symptoms of emotional distress, as well as any special considerations for CHD survivors as compared with the general population or those with acquired heart disease.

Pharmacotherapy

Selective serotonin reuptake inhibitors are commonly used to treat symptoms of mood (eg, MDD) or anxiety disorders (eg, generalized anxiety disorder and obsessive–compulsive disorder). A 2013 review on selective serotonin reuptake inhibitor use in patients with either coronary heart disease or heart failure concluded that they are generally safe and may even decrease first or recurrent cardiovascular events.[55] However, the benefit for those with heart failure was unclear. Diller and colleagues[56] reported that, of the 6162 adult CHD survivors followed, 3.3% were taking an antidepressant, which included selective serotonin reuptake inhibitors or tricyclic antidepressants. Over an 11-year follow-up period, 8.2% of the patients had died. The mortality rate was not directly related to use of antidepressant medication.

Anxiolytic medications, such as benzodiazepines, are also prescribed to treat physical symptoms of anxiety. Benzodiazepines are not considered first-line treatments for anxiety disorders, in large part owing to their adverse effects with long-term and/or high dosage use, including the potential for physical and psychological dependence.[57] The long-term consequences of anxiolytic use among individuals with acquired heart disease or CHD has not been reported.

In choosing between psychotherapy, pharmacotherapy, or a combination of both, the benefits and drawbacks of each treatment option must be weighed (**Table 2**). The treatment preferences of each patient should be assessed before providing a referral, given that the drawbacks for either psychotherapy or pharmacotherapy may be more prohibitive for some individuals. Once a referral is made, mental health providers will assist the patient in choosing the right treatment option for them while taking into account best practices for addressing the reported symptoms. If both psychotherapy and pharmacotherapy are indicated, there may be multiple providers who will collaborate (eg, a psychologist and psychiatrist).

Other Treatment Modalities for Symptoms of Emotional Distress

In addition to medication and therapy, other intervention modalities may enhance the emotional well-being of adults with CHD. Given that loneliness is related to psychological distress among adults with CHD,[50] it may be hypothesized that peer support interventions could decrease emotional distress. Adult CHD survivors identify peer support as a necessary aspect of positive emotional well-being,[58] and many endorse interest in receiving peer support.[59] Although peer support programs have been highlighted as a complement to psychological services in the care of adults with

CHD,[60] research on peer support is limited. Of note, the Adult Congenital Heart Association (www.achaheart.org) offers Heart to Heart, a program that matches patients with trained peer mentors (ambassadors) for support related to concerns such as adjustment to health status and cardiac procedures.[61]

Mindfulness-based interventions are recognized for having a positive impact on stress, as well as depressive and anxiety symptoms, among adults with cardiovascular disease.[62] Among adults with cardiovascular disease, mindfulness-based stress reduction interventions that include meditation, relaxation, and cognitive restructuring components have been shown to decrease stress, depression, and anxiety[63] and to promote self-efficacy and enhance quality of life.[64] A statement from the American Heart Association highlighted meditation as a low-cost and low-risk adjunctive approach to stress and other cardiovascular risk reduction.[65]

Physical activity has also gained empirical support as a treatment option for depressive symptoms.[66] Being physically active promotes positive mood maintenance[67] and decreases the cardiotoxicity of stress.[68] The emotional benefits of physical activity among children and adults with CHD were emphasized in an American Heart Association Scientific Statement.[69] Given the cardiovascular and emotional benefits of physical activity, health providers should consider having conversations not only about the presence or absence of physical activity restrictions, but also educate patients about the multitude of benefits of engaging in physical activity levels appropriate for that individual and their unique cardiovascular considerations.

SUMMARY

Although the majority of adult CHD survivors are thriving, there is a significant portion who will encounter emotional distress that warrants treatment. Identifying these individuals in an outpatient clinic setting is feasible given the wide variety of available measures. The critical step, however, is ensuring sufficient referral resources for further assessment and treatment. This may necessitate communication with mental health providers in one's institution or in the local community, including psychologists, social workers, and psychiatrists. Establishing these collaborations is vital for ensuring optimal emotional and physical well-being of adult CHD survivors.

CONFLICTS OF INTEREST

None.

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