

## **Heart disease and depression: is culture a factor?**

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## **Abstract**

**Objectives:** This article seeks to review and discuss the evidence linking depression, coronary heart disease (CHD) and culture.

**Methods:** PsychInfo, CINAHL and Pub med were searched for articles publishing evidence related to depression, culture and CHD and interrelations between these concepts. Retrieved articles were analyzed using narrative review and thematic content analysis.

**Results:** Key themes identified from the literature review were: 1) Depression is a factor in development and prognosis of CHD and impacts on the capacity to self-manage and adhere to treatment recommendations; 2) Culture mediates mental health/illness representations and treatment seeking behaviors and may further hinder detection and treatment of depression in cardiac patients; and 3) There is a need for culturally appropriate screening and therapeutic strategies.

**Conclusions:** Management of depression in individuals from diverse cultures requires using linguistically and culturally competent strategies to ensure accurate screening and detection of depressive symptoms and if applicable, offering a type of treatment that is acceptable and more likely to be adhered to by the patient.

**Practice implications:** As depression is a predictor and moderating variable in the genesis and progression of CHD, understanding how factors, such as culture impact on screening and management is important for clinical practice.

**Key words:** Depression, culture, coronary heart disease

## **1. Introduction:**

Physical health is an important underpinning to mental wellbeing and these links are bidirectional [1]. Depression is a common co-morbid condition of many chronic diseases including coronary heart disease (CHD) [2]. Patients following an acute cardiac event have nearly 3-fold higher risk of developing depressive symptoms compared with the general population, and the prevalence is similar in patients with diverse range of cardiac conditions [3], with slightly higher rates in patients with heart failure [4]. An extensive literature consistently associates depression with increased risk of both incident CHD and poor prognosis in cardiac patients, although between-studies differences exist in design, sample size, screening tools, assessment time and follow up period. Despite its high prevalence, impact on cardiovascular outcomes and yet cost effective treatability, depression in cardiac patients is unrecognized and untreated [3].

Highlighting the importance of depression in the management of CHD, the American Heart Association (AHA) Prevention Committee in 2008 emphasized the need to screen and treat depression and recommended all patients with CHD should be screened for depressive symptoms. The Committee advocated the Patient Health Questionnaire (PHQ-9) for screening and referring patients who need further assessment and/or treatment for depression [3]. Although this is an important step towards increasing awareness and screening for depression in patients with CHD in general, the science advisory fails to address the issue in linguistically and culturally diverse patients and whether PHQ-9 possesses psychometric properties of validity, reliability, and high sensitivity for detecting depression across cultures. Undoubtedly, culture shapes an individual's perceptions and explanatory models to identify and respond to illness,

particularly mental health and part of understanding of the experience of depression depends on cultural perceptions of what symptoms become labeled as a depressive disorder and how depression is thought of within a particular culture [5]. The representation of depression and the process through which individuals admit depression and seek medical care is mainly culturally determined [6]. Understanding socio-cultural factors in depression can improve detection of depressive symptoms in cardiac patients and the offering a type of treatment that is acceptable and more likely to be adhered to by the patient. This article reviews the conceptual and empirical issues regarding the interaction of depression, heart disease and culture. Specifically we have sought to identify whether depression is a factor in cardiac patients and how culture might affect detection and treatment of depression in patients with CHD.

## **2. Method:**

Articles were identified by searching PsychInfo, CINAHL and Pub med using various combinations of key words “depression”, “coronary heart disease”, “coronary artery disease”, “cardiovascular disease” and “culture”, and the identified articles were limited to studies written in English. Literature on depression in cardiac patients and the role of culture in development and expression of depressive symptoms and help seeking behaviors was reviewed to highlight issues in management of depression in culturally and linguistically diverse patients. Retrieved articles were analyzed using thematic content analysis [7].

## **3. Results:**

The results of this review will be discussed under the following themes: 1) Depression is an important factor in coronary heart disease and impacts on the capacity to self-manage and adhere to treatment recommendations; 2) Culture mediates health/ illness representations and treatment

seeking behaviors, and may further hinder detection and treatment of depression in cardiac patients; 4) there is a need for therapeutic strategies within a framework of culture.

### **3.1. Depression is an important factor in cardiac patients**

Cardiovascular disease is the main cause of mortality and depression the major cause of disability worldwide and they are projected to continue to do so for the next couple of decades [8]. Development and prognosis of both CHD and depression have been affected by transition from conformity to individualism and the association between these two diseases been reported globally; however, there seem to be cross cultural differences linking depression to CHD [9]. In a large international multicentre survey by the World Health Organization in 1995, the highest link between depression and heart disease was found in Santiago in Brazil, in that 50% of depressed people reported co morbidity of heart disease and the lowest was reported from Nagasaki in Japan (7.2%) [9]. These results may reflect vulnerability of some cultural groups to depression in response to physical disease and support the idea that members of different cultures experience stressful events quite differently. These differences may be partially explained by cultural variations in emotional response to a health threat including heart disease. These responses are influenced by causal attributions, labeling the symptoms, the perception of temporality and curability, and the ability to control events and the consequences of a health threat and influence an individual's capacity to cope with a health threat [10].

A systematic reviews of studies to estimate the magnitude of the risk posed by depression for onset of coronary disease concluded that depression increases the risk of developing CHD 1/64 times [11]. In addition, depression, both major and minor, has been linked to an increased risk of morbidity and mortality in patients with CHD [3]. These associations do not seem to disappear

over the course of long-term follow-ups. With the aim of investigating the long-term risk of death in cardiac patients with depression, Barefoot et al. [12] followed 1250 patients with established CHD for up to 19.4 years and found that compared with non depressed patients cardiac patients with moderate to severe depression had 69% higher risk for cardiac death and 78% greater risk for all-cause death patients, after adjusting for disease severity and treatment.

Although the precise mechanism is not completely understood, both biochemical and behavioral factors have been shown to influence depression in patients with heart disease. Depression increases heart rate and reduces heart rate variability. It is also associated with abnormal platelet function and endothelial dysfunction [13]. Further, behavioral effects of depression have been reported, with depressed patients being vulnerable to other CHD risk factors, such as smoking, failure to exercise and poor patient adherence to medications, attendance at CR and life style changes [14]. This is of particular significance considering the importance of adherence to treatment regimen and self-management in chronic diseases including heart disease.

These effects are likely exacerbated in societies where cultural and religious considerations already hamper participation- particularly of women- in risk reducing activities such as exercise and attendance at cardiac rehabilitation programs (CR), poor patient-doctor communications and follow-up consultations exist [15]. This is important considering the fact that women-with or without CHD- are at higher risk of developing depression and show lower attendance rate and greater drop out from CR than men [16]. Other socio cultural factors such as unemployment and social isolation also seem mediates relationship between depression and CHD in women. Research suggests that women with established CHD who are employed have lower depression symptoms and better social support than women who are unemployed [15]. These findings have

an implication that the social inequality and economical disadvantages experienced by women in some cultures may affect experience, detection and management of depression in women with CHD. These factors may collectively contribute to the poorer clinical CHD outcomes in women, such as higher rehospitalisation rates and experience of angina symptoms [17].

### **3.2. Culture mediates illness representations and help seeking behaviors**

Culture and ethnicity are important features of health and illness, in that health-risk life styles, illness representation, help-seeking behaviors and compliance with medical advice are all reflections of an individual's cultural norms, values and experiences and need to be integrated into an individual's health care [18, 19]. In response to an increasing recognition of the role of cultural context and perceptions in shaping an individual's health and outcomes ethno medicine have been developed and evolving to better understand socio-cultural factors important in disease management. Cultural factors affecting disease development and prognosis, the process of symptom recognition and illness representation as well as the receptivity to treatment modalities are thus of interest to Ethno medicine [20].

Although depression disease is a global health concern, significant cross-cultural variations exist in how depression illness is expressed and coped with. Kleinman et al [21] argue that while depression disease is conceived as malfunctioning of bio-psycho-physiologic processes in individuals, depressive illness represents personal, interpersonal and cultural response to depression, meaning that depressive illness is specific and culturally constructed. Cultural factors profoundly influence the way an individual conceptualizes, experiences and present depression. Further, help seeking behaviors for depression are influenced by cultural norms and values. For example, although somatic symptoms of depression are not uncommon worldwide, people from

non-Western cultures such as Chinese, Japanese are more likely to present with strictly somatic symptoms of depression [22, 23]. In many non-Western cultures such as Japan, china and Middle East, people try to deny depression for fear of being stigmatized as mentally ill and are more comfortable to present physical symptoms of depression [24]. In other words, culture determines the degree to which a particular individual shows somatic symptoms of depression such as fatigue and pain. These cultural variations in clinical presentation may hinder diagnosis of depression resulting in patients not being diagnosed and not receiving appropriate treatment.

The variations in presentation of depression may partially be related to cultural differences in causal attribution to depression; while people from Western cultures generally believe in biochemical imbalance, in some cultures mental disease including depression is related to supernatural forces [24, 25]. Indians attribute it to heat and cold [26] and Chinese to energy flow which is rooted in Buddhism [19]. Patients may attribute depressive symptoms to their cardiac disease and believe that they would be temporary in duration and therefore may not be willing to discuss these symptoms with their doctor. Patients' beliefs about causes of their depression often dictate the source of help and may hinder help seeking behaviors of depressed cardiac patients [27]. Interestingly depression itself seems to affect patients' casual attributions to cardiac disease. In a study by Gholizadeh et al. (2009) patients with severe depression were more likely to attribute their heart disease to depression and not to modifiable behavioral risk factors [28], adding another barrier to risk factor modification in cardiac patients.

### **3.3. Culture impacts on screening and assessment**

Despite its high prevalence and significant impact on cardiovascular health outcomes, the detection and treatment of depression among CHD patients have been suboptimal, partially



because these symptoms are viewed as normal and temporary emotional reaction to cardiac disease [3]. In addition, detection and management of depression present significant cultural and methodological challenges for health professionals and researchers. Cultural factors affect disease acceptance and help seeking for depression. Despite worldwide prevalence, there is still considerable stigma surrounding mental disease including depression, particularly in developing countries. Developed countries have taken initiatives to reduce stigma associated with mental health diseases through public education and national mental health campaigns. In the United States of America (USA), for example, increasingly people's attitudes towards mental health treatment seeking are becoming positive [29]. However, the enormity of stigma towards depression in developing countries is explicit in a study conducted by Ozmen et al. (2004) in Turkey. Findings of this study showed that the public's attitudes towards depression were very negative. There was a tendency to isolate depressed patients from the society, with nearly half of the subjects perceiving depressed people as dangerous, one-quarter of the subjects stating that depressive patients should not be free in the community, and more than half stating that they would not rent their house to a person with depression [6].

Social stigma toward mental disease may prevent individuals from reporting their depressive symptoms and affects the accuracy of the statistics reported for prevalence/incidence of depression [6]. In societies where social stigma is high, a tendency for somatic presentation of depressive symptoms is high, as people may find it easier and more acceptable to discuss the somatic symptoms of their disease [22]. Non-specific presentation of depression such as fatigue, dizziness, neck pain and insomnia, which are also common in patients with CHD, may complicate diagnosis of depressive symptoms in cardiac patients and delay treatment [30]. It is not clear, however, whether depressed cardiac patients are subject to stigmatization at the same

degree as depressed patients without a physical disease. These patients may experience less stigma because of a supposed biological cause-CHD disease- inducing their depression [31].

Another issue that requires consideration is the validity and responsiveness of depression assessment measures used for screening of depression in cardiac patients from diverse language and cultural backgrounds. Time and cost constraints are common barriers to the use of the diagnostic interview, which is considered as the gold standard for defining clinical depression [32]. Therefore, self-reported depression tools continue to maintain their usage in research and practice. Examples of frequently used tools in cardiac patients are the Beck Depression Inventory (BDI), Cardiac Depression Scale (CDS), Hospital Anxiety and Depression Inventory, Beck Depression Inventory-Fast Screen for Medical Patients, Hamilton Depression Rating Scale and Centre for the Epidemiological Studies Depression Scale (CESD). Recently, the AHA Prevention Committee (2008) recommended the PHQ-9 for screening for depression in cardiac patients [3], yet capability of this instrument to correctly and with sensitivity screen for depression in culturally diverse patients need to be investigated. Validation of depression detection tools against culturally sensitive diagnostic interviews may improve credibility and reliability of these measures.

In addition, the extent to which responses to psychometric measures reflect the true rate of depression across cultures remains an issue of concern. It has been shown that there are cultural differences in response to rating scales and members of some cultures tend to ignore midpoint of a scale items and chose extremes [33, 34]. For example, a study by Lee et al. (2002) found that when expressing positive feelings, Japanese and Chinese were more likely to choose the midpoint of a Likert scale item than Americans and Japanese were also more likely than

Americans to reject negative items [34]. Cross-cultural response bias in response to screening tools for depression may lead to a contaminated conclusion about variations in the experience of depression in cardiac patients across cultures.

### **3.4. Need for therapeutic strategies within a framework of culture**

Like general population, in patients with CHD the treatment options for depression include pharmacotherapy, psychosocial interventions or a combination of both. Sertraline and citalopram, the two selective serotonin reuptake inhibitor (SSRI) antidepressants, have been shown to be safe and effective for treatment of depression and improving quality of care in patients with CHD and are recommended by the AHA Prevention Committee as first-line therapies for these patients. Nevertheless, patients should be monitored closely for potential adverse effects of antidepressants and medication adherence [3]. Psychosocial interventions such as behavioral therapy, cognitive behavior therapy and interpersonal therapy may also be used in combination with pharmacotherapy or alone [3].

Individual preferences and culture are undeniably a critical element to be taken into account in treatment of depression. Depressed individuals' preferred resources to seek help are influenced by the meaning that they attach to depressive symptoms, disease acceptance as well as accessibility of mental health care. Conceptualization of depression symptoms influences treatment options across cultures. A study by Karasz (2005) found that South Asian immigrants to USA see depressive symptoms as a social problems or emotional reactions to situations such as problem with in-laws than chemical imbalances in the brain and for them treatment strategies involve solving the problem or avoiding thinking about the problem [35]. In cultures

where depressive symptoms are rather conceived as “illness” than “disease”, the possibility that an individual seeks help from alternative practitioners from their own cultures increases [19].

The degree to which antidepressant medications are accepted and adhered to are influenced by self- stigma and social stigma towards depression and antidepressants. Further, lack of belief in effectiveness of treatment or a perception that antidepressants are addictive may lead to some people rejecting antidepressants and preferring alternative practices such as interpersonal therapy, herbs, meditation and exercise [6, 19]. For example, Hispanic Americans less than non-Hispanic whites seek help from mental health specialists and tend to prefer pharmacotherapy in combination with counseling to pharmacotherapy alone [36]. Cognitive behavioral therapy has been shown can benefit depression in patient with CHD and may be an alternative for patients who prefer nonpharmacological treatment [3].

Treatment of depression may be further overlooked and delayed in cardiac patients from diverse linguistic and cultural groups due to factors such as lack of awareness of mental health services, communication barriers, and unwillingness to report symptoms of depression and nonspecific presentation of depressive symptoms such as somatic presentations [36].

Further, CR and exercise training programs have been shown to affective in reducing depressive symptoms [37]. Management of depression in cardiac patients from diverse language and cultural backgrounds requires, at minimum, health professionals to have access to a quality translation of a depression screening tool, such as the PHQ-9 in various languages and to be equipped with cultural competency skills. Despite the effectiveness of CR, patients from minority groups show lower cardiac rehabilitation attendance for many reasons[38]. For example, in some cultures a belief that patients should take a passive role and stay in bed [39, 40]

may prevent CR attendance which shows benefit in reduction of depression in cardiac patients. Thus, culturally competent CR programs have a capacity to increase the attendance rate of culturally diverse population groups and help these patients with their depression problem. Patients with heart disease may better respond to interventions for reduction of depression that imply culturally and linguistically sensitive approaches to describe the cause of depressive symptoms and how available treatment modalities could help ease depressive symptoms and improve their functionality and quality of life.

#### **4. Discussion and Conclusion:**

Effectiveness of interventions to improve quality of life, reduce depression and likely improve adherence to treatment recommendations suggests that screening for depression and providing an appropriate counseling and/or medical treatments should be incorporated into the management of CHD to improve clinical outcomes. Patients from minority groups; however, are less likely to use these programs, to be actively involved in cardiovascular risk reducing behaviors and adhere to recommended medical regimen [41]. Depression co morbidity may further hamper changing risky behaviors and medication adherence in this population group.

Social stigma towards mental disease profoundly influences the conceptualization of depression, presentation of the disease and the individual's acceptance of recommended treatment. Culturally and linguistically competent approaches may ensure that cardiac patients from diverse cultural groups could also benefit from a wide range of depression treatment modalities including pharmacotherapy, psychological counseling, and alternative therapies such as exercise rehabilitation. Further, attention should be granted to the validity of depression assessment tools when screening and reporting depression in culturally and linguistically diverse populations.

**Practice Implications:** As depression is a predictor and moderating variable in the genesis and progression of CHD, understanding how factors, such as culture impact on screening and management is important for clinical practice.

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