

# Psychocardiology's Contributions to Comprehensive Cardiovascular Care in Cuba

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## ABSTRACT

This paper describes psychocardiology studies conducted from 2002 through 2018 in the Cardiology Department of the Dr Gustavo Aldereguía Lima University General Hospital in Cienfuegos Province, Cuba. Given the strong association between cardiovascular diseases and lifestyle, negative emotions and personality traits, psychology and medicine are equally necessary components of prevention and patient care, indispensable to primary and secondary prevention and to rehabilitation. When its therapeutic principles are appropriately applied, psychology can have a positive impact on the course of the disease and on patients' adaptation to new habits and lifestyles. The psychocardiologist's job is fundamental in achieving conscious participation by patients in their rehabilitation. Theoretical and practical contributions include a gender-based approach, addressing patients' sexual needs, neuropsychological assessment of damage associated with cardiovascular diseases, the particularities of pediatric patient care, family involvement in rehabilitation, and services for families at risk for cardiovascular events due to genetic factors. Results of these studies are included in published methodology for intensive psychological treatment for patients and health care workers.

**KEYWORDS** Psychology, cardiology, cardiac rehabilitation, Cuba

## INTRODUCTION

The importance of risk factors in cardiovascular diseases has been acknowledged by medical science for over 60 years. WHO has called for cooperation and collaboration toward reducing premature mortality from noncommunicable diseases by 2025, including cardiovascular diseases, which remain the main cause of death and disability worldwide.[1] Preventive activities and lifestyle modifications are needed to reduce the risk, morbidity and mortality of cardiovascular diseases.[2] In Cuba, these diseases have followed an upward trend for the last 10 years and are the leading cause of death.[3]

The key role of psychological factors in the onset and evolution of cardiovascular diseases and their risk factors, including socio-psychological factors, has been recognized for years.[4] In Cuba, psychocardiology has contributed new theoretical and practical approaches based on outcomes of research conducted in 2002–

## IMPORTANCE

The theoretical and practical contributions of psychocardiology to comprehensive care of patients with cardiovascular diseases make a positive impact on their rehabilitation. This article describes those contributions, emphasizing the multidisciplinary approach adopted in a Cuban provincial hospital.

2018 in the Cardiology Department of the Dr Gustavo Aldereguía Lima University General Hospital (HGAL) in the central province of Cienfuegos.[5–8] As a result of these studies, psychocardiologists are incorporated into treatment in phase 1 cardiovascular rehabilitation (during hospitalization) and continue through phase 2 convalescence (generally, two to six months after discharge) and phase 3 (lifelong maintenance).

## DEVELOPMENT

**Background** Certain personality traits increase the risk of cardiovascular diseases, particularly type A personality, in which hostility is a predictive factor,[9] and type D personality, characterized by depression, social alienation and suppression of negative emotions.[10] Depression accelerates disease progression; induces tachycardia, ventricular arrhythmia and fatal fibrillation; and is associated with functional deterioration and adverse cardiac events.[10] Stress can raise blood pressure and heart rate, and affect other physiological mechanisms and lifestyle. Hemodynamic activation can trigger acute coronary episodes in individuals with atherosclerotic plaque and is associated with recurrence of cardiac events and death. Anxiety diminishes quality of life. Among anxiety disorders, post-traumatic stress is a risk factor for cardiovascular diseases.[10] Socioeconomic factors and poor social support are predictive of adverse clinical outcomes in cardiovascular diseases.[10]

In line with this, in 1998, the Status and Consensus Conference on Psychocardiology noted the importance of behavior and several psychosocial risk factors in the etiology, development, rehabilitation and management of cardiovascular diseases.[11,12] These factors include socioeconomic inequality, emotional stress, exhaustion, anxiety and depression, chronic emotions, type A personality, hostility, and lack of family and social support. Importance was given to preventive treatment (diet, exercise, smoking cessation and introducing medication) to reduce stress. Recommendations included gender studies with emphasis on risk factors in women, behavioral and other psychosocial risks, and the benefits of postmenopausal hormone replacement.[11] These contributions are the foundation of the cardiac rehabilitation guidelines currently in use in many countries.

Psychocardiology emphasizes the high comorbidity between psychiatric disorders and cardiovascular diseases, including psychosocial risk factors in primary prevention, as well as the importance of psychotherapeutic intervention in early stages of the disease, in hospital care and in outpatient cardiac rehabilitation.[13]

As a result of these contributions, a medical subspecialty in psychocardiology was proposed, covering epidemiological, biological and psychosocial factors; clinical disease management; and integration of cardiology, psychology and psychiatry in cardiology research.[14] Despite extensive knowledge about the role of psychological and social variables in cardiovascular diseases, collaboration between medicine and psychology is lacking and

comprehensive, multidisciplinary approaches in medical practice are rare.

**Theoretical contributions** Psychological intervention is indispensable in primary and secondary prevention, and rehabilitation. Given the strong association between cardiovascular diseases, negative emotions, personality and lifestyle, disease prevention and treatment require equal provision of clinical and psychological care. Psychology must go hand in hand with prevention activities and clinical procedures throughout cardiovascular patients' rehabilitation. When the therapeutic principles of psychocardiology are appropriately applied, they make a favorable impact on the course of the disease and on patients' adaptation to a new lifestyle. Furthermore, psychocardiological care is an important resource for ameliorating negative emotional responses to the invasive procedures needed to treat many patients. Together with physicians, psychocardialogists participate in modifying unhealthy behaviors and also play a fundamental role in preparing families, who provide indispensable patient support and can be promoters of lifestyle changes. In primary prevention, the specialty also plays an important role in identifying hereditary predispositions. The psychocardialogist intervenes in the treatment of neurological damage and its neuropsychological effects, applies a gender-based approach, and addresses sexual issues and their association with coronary conditions throughout the prevention and rehabilitation process. In Cuba, psychocardiology has presented new theoretical arguments in this field.[5–7]

**Practical contributions to cardiovascular rehabilitation** Theoretical knowledge of these conditions' psychosocial aspects is extensive but seldom applied in clinical care.[12] This section describes practical applications of these principles.

*Conscious participation by patients in cardiovascular rehabilitation* Psychocardialogist interaction with patients begins in the disease's acute stage and aims to modify behavior following hospital discharge by raising awareness of necessary lifestyle changes. Psychocardialogists help patients understand their condition, as well as the need to modify their lifestyle and control their emotions to improve recovery. This includes providing resources facilitating the behavior modification that is essential for clinical stabilization and success of clinical treatments. These health professionals help patients redesign their behavior by introducing heart-healthy habits as a means to self-care, which will later become self-regulated and conscious daily behaviors. The family—an essential component in rehabilitation—participates in this process as an agent of lifestyle change.[6,7]

Psychological intervention in phase 1 of cardiovascular rehabilitation developed in the Dr Gustavo Aldereguía Lima University General Hospital is termed “intensive psychological treatment in special situations,”[6,7] unprecedented in Cuba and undocumented in the scientific literature reviewed from other countries.[12] It initiates tertiary prevention through attitude modification and by helping patients cope with hospitalization, emotional control in crisis situations, and modifying physiological processes exacerbated by such emotional states. It is applied as soon as patients are admitted and continues in a planned, systematic way until discharge, respecting both the disease complexity and patient disposition.[6,7]

These results have been applied in other settings for patients with stroke and other cardiovascular or circulatory conditions,

as well as for diabetics, pregnant women with chronic conditions, and health workers with chronic conditions or risk factors.

*Neuropsychological assessment* Patients suffering cerebral hypoperfusion may present cognitive decline associated with cortical pseudolaminar necrosis and hippocampal sclerosis. Traditional risk factors for cardiovascular diseases are also associated with a decline in cognitive function in people with heart disease.[15] Patients whose condition compromised oxygen supply to the brain may present alterations in their ability to plan and anticipate their actions, in processing information, and in mobilizing the resources needed to correctly maintain cortical tone.[7] Damage to cognitive functions interferes with rehabilitation and hinders therapeutic adherence. The psychocardialogist's job is to detect possible cognitive damage during phase 1 and to design therapeutic strategies aimed at cognitive stimulation to be implemented with family participation and extended through phases 2 and 3.[7]

*Gender-based approach* Implementation of specific gender-based strategies is needed to improve outcomes of cardiovascular therapy.[16] The specificities of prevention and treatment in women has gained importance, and there is growing research on the interactions between psychosocial and biomedical factors in women with heart disease.[17] Some studies look only at traditional risk factors in these conditions in women:[11] others highlight the need to investigate gender differences.[12] Our approach takes into account from the start of therapy[7] the differences between men and women with ischemic heart disease that are associated with personality traits presenting as differences in expression and control of emotion, in fulfillment of productive and reproductive roles, in willingness to actively participate in self-care,[7] and in vulnerability to health risks.[18]

*Addressing altered sexual response* Alterations in sexual response are common in people with cardiovascular diseases, due to organic or psychological causes, or the effects of medication.[19] Several authors address the impact of sexual dysfunction on patients' quality of life, and recommend guidance based on lifestyle, physical activity, and the possibility of medication (sildenafil);[2,19,20] however, this assistance is rarely provided. [19] Our psychocardiology care program includes sexual counseling that takes into account subjective factors. It is carried out by means of consensus between the cardiologist and the psychocardialogist at the acute phase, during which a sexological diagnosis is made, which can include drug therapy and counseling for the patient and their spouse or partner. These therapeutic components are also included in outpatient treatment.[7,8]

*Multidisciplinary approach to cardiovascular rehabilitation* Phase 1 cardiovascular rehabilitation requires teamwork involving cardiologists, psychologists, nurses and rehabilitation specialists. Data of psychological interest are recorded in the patient's chart. Nursing staff have been trained in applying emotional control techniques reflected in clinical indications. In the days leading up to hospital discharge, doctors, nurses and psychotherapists participate in group activities with patients and their families to reinforce learned techniques, motivate lifestyle changes and prepare for the return home. Cardiologists have gained an understanding of patients' psychophysiological responses and assist with psychological interventions, particularly in severely ill


patients. This approach integrates knowledge in designing self-help methods and materials for phases 2 and 3.[6,7]

**Pediatric psychocardiology** Children with congenital heart disease frequently present anxiety, depression, psychological conflicts, low self-esteem, learning difficulties and rejection of lifestyles imposed by the disease as well as medical care. In Cuba, cardiovascular rehabilitation provides psychological resources for coping with and adapting to the particular living conditions the disease implies for children and their families. It supports the process of social integration in phase 3, which includes education for school-age children.[21]

Psychological care addresses needs of pediatric patients and their families, who have the difficult task of establishing an appropriate lifestyle, detecting psychological changes generated by the disease and notifying specialists responsible for care. A psychological care protocol for school-age pediatric cardiology patients has been created and is being evaluated in Cienfuegos Province to verify its benefits and make necessary adjustments. The protocol's introduction in other Cuban institutions is expected, culminating with a set of nationally standardized guidelines for psychocardiac care of pediatric patients and their families.

## CONCLUSIONS

Despite the importance of psychological interventions in hospitalized heart patients, there are few published studies.[2,12,20,22] The described approach provides a methodology for psychocardiological intervention in acute-phase cardiovascular patients. It contains diagnostic techniques, self-help materials, relaxation methods and other psychotherapeutic techniques for phases 2 and 3 described in the Programs and Methodologies section of the book *Psychocardiology in the Health-Disease Process: from Theory to Practice*,[7] integrating knowledge from the fields of cardiology and psychology, and which was awarded the 2014 Annual Health Prize by the Ministry of Public Health. In 2019, the supporting studies were also awarded the Annual Health Prize for applied research.

Generalizing these results to all cardiology services in the country requires postgraduate training of cardiologists, psychologists and health policymakers in the comprehensive management of cardiovascular disease. These activities respond to WHO's call to reduce the burden of cardiovascular disease by 2025, and they rely on the political will to guarantee free, universal access to health care in Cuba, from the primary level to specialized cardiology services. 

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