

## Perioperative Mental Health Support for Heart Surgery Patients

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### ABSTRACT

This commentary discusses research and consensus guidelines regarding the prevalence of mental health problems among heart surgery patients and the provision of mental health care before, during and after surgery. Comorbid mental illnesses-including especially depression, anxiety and post-traumatic stress disorder-are present in this patient group and associated with higher mortality risk. Consensus guidelines recommend screening, assessment and intervention for affected patients.

**Keywords:** Psychological distress; Psychological comorbidities; Depression; Delirium; Cognitive disorders

### INTRODUCTION

Patients undergoing major heart surgery may feel acute psychological distress, and some patients also carry the burden of long-term psychological comorbidities stemming from psychosocial impairments at home and at work. Common psychological problems are anxiety symptoms and anxiety disorders, post-traumatic stress disorder, adjustment disorders, depression, delirium, and cognitive disorders [1].

Low socioeconomic status, early childhood traumatic stress experiences, chronic stress, mental illness, and lack of adequate social support are associated with the onset of cardiovascular diseases and with higher mortality [2]. Perioperative depression in cardiac surgery patients is significantly associated with increased postoperative mortality both early (RRE, 1.44; 95% Confidence Interval [CI] 1.01-2.05;  $p=0.05$ ) and late (RRE, 1.44; 95% CI 1.24-1.67;  $p<0.0001$ ), and perioperative anxiety is significantly correlated with increased late postoperative mortality (RRE, 1.81; 95% CI 1.20-2.72;  $p=0.004$ ) [3]. Also, patients with an acute type A aortic dissection who survive the emergency heart surgery are at high risk for developing a post-traumatic stress disorder [4]. About 14% (95% CI=8%-21.8%) of heart transplant patients develop a PTSD as well [5].

In light of these risks, supportive mental health care for heart surgery patients in the perioperative setting is recommended in international guidelines [2,6-9]. Each of these various guidelines

addresses different patient groups, but their recommendations regarding mental health support are similar.

The central goals of psycho-cardiological care in the perioperative setting are: identifying pre-existing mental health disorders (conducting differential diagnostics if necessary) to identify risks to surgery outcomes, identifying unusual psychological burdens, communicating the case-specific mental health risks within the interdisciplinary cardiology care team, and planning and delivering specific interventions [2]. Specific recommendations can be roughly divided into the two categories of screening and assessment and interventions. In all cases, care requires patient consent and should be delivered by mental health professionals integrated into multidisciplinary cardiological care teams [10].

### RECOMMENDATIONS FOR SCREENING AND ASSESSMENT

The most comprehensive set of recommendations regarding perioperative psychosocial screening and assessment for heart patients is contained in guidelines for transplant and Mechanical Circulation Support (MCS) patients [6]. For related recommendations, see [2,11]. These guidelines recommend a pre-surgery psychosocial assessment that focuses on socioeconomic status, treatment adherence and health-related behaviors, existing psychological symptoms or mental health

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conditions including especially depression, anxiety and post-traumatic symptoms, substance abuse history, cognitive status including the capacity to give consent and comply with the demands of self-care after surgery, knowledge of current illness and treatment options, coping resources, social isolation, and social supports including family and job.

A structured clinical interview conducted by a qualified mental health professional using validated instruments is the gold standard for assessment. The evaluator should also ensure the coordination of necessary interventions, the monitoring of mental health treatment progress, and the communication regarding the patient's status with the multidisciplinary cardiology care team.

### INTERVENTIONS

All cardiac surgery patients should have access to basic mental health care in the perioperative setting [2,9], including also the rehabilitation stage [7]. When needed for specific mental health problems, guidelines recommend interventions focusing on patient education, exercise, psychotherapy, and stress management. Several specific forms of psychological interventions for a variety of outcomes among heart surgery patients have been shown to be effective in meta-analyses; for a systematic overview see [12]. These include psych education prior to surgery, psychotherapy (especially cognitive-behavioral therapy) for depression and anxiety, psychosocial support especially immediately prior to the operation, and hypnotherapy. A list of common interventions is provided in the Table 1.

Psychological interventions for heart surgery patients	
Preoperative education	Regarding the heart disease and the surgical procedure with a focus on potential psychological reactions and recommendations regarding behavior modification
Psychological diagnostics	For identifying pre-existing mental health conditions, drug abuse issues, sleep problems and sources of unusual psychological stress.
Cognitive behavioral therapy (CBT)	For dysfunctional cognitions
Medical hypnosis and hypnotherapy	For relaxation, pain relief, anxiety reduction and reinforcing positive emotions
Acute supportive interventions	For psychological decompensation in crises
Relaxation techniques	Such as autogenic training and progressive muscle relaxation
Family systems psychotherapy	For patients in difficult relationship situations

Interventions for preventing post-operative delirium	Including education, cognitive stimulation and early mobilization with the help of CBT
Communication techniques	In the sense of patient-centred communication, focusing for example on the verbalization of emotions

**Table 1:** In-hospital psychological interventions for heart surgery patients.

Patients receiving therapy for mental disorders should continue with psychotherapy and medication as long as these do not interfere with the primary goal of acute cardiovascular treatment and recovery.

### CONCLUSION

Due to the relevance of psychosocial factors, a mental health screening should occur before major cardiac surgery, especially transplantation or implantation of MCS. If patients show signs of mental distress or mental disorders, psychotherapeutic support should be made available. Mental health interventions can take various forms, many of which have been shown to be associated with better surgery outcomes among target groups in meta-analyses. Mental health support should be organized as a process that begins before hospital admission and continues through the operation and extends into the rehabilitation phase.

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