

**Addressing Psychosocial Challenges After Cardiac Surgery: Assessment and Intervention
Strategies**

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Executive Summary: Psychosocial Support for Cardiac Surgery Patients

Key Findings

- Psychological distress (anxiety and/or depression) was identified in a substantial proportion of cardiac surgery patients, including those without prior mental health diagnoses (McCann et al., 2023).
- Routine psychosocial screening using the Patient Health Questionnaire–9 (PHQ-9) and Generalized Anxiety Disorder–7 (GAD-7) was feasible within standard preoperative workflows (Thompson & Pedersen, 2023).
- A combined intervention using virtual reality (VR) and video-based education improved patient preparedness and understanding of the surgical experience (Anderson et al., 2025; Ni et al., 2022).
- Mean depression scores decreased by 41%, and anxiety scores decreased by 58% following the intervention.
- Patients reported reduced fear of the intensive care unit (ICU) environment and improved coping during recovery (van Steenberg et al., 2022).
- Clinical outcomes were favorable, including short ventilation times, no patients returned to the ICU, and zero 30-day readmissions.
- The intervention demonstrated strong acceptability among patients and staff, supporting future sustainability and scalability.

Background and Purpose

Cardiac surgery is frequently associated with significant psychological distress, including anxiety and depression, which can negatively impact recovery outcomes, length of stay, and overall quality of life (Gorini et al., 2022; McCann et al., 2023). Psychological distress has been

linked to increased morbidity, prolonged hospitalization, and higher healthcare utilization (Lawton et al., 2022). Despite strong evidence and national guideline recommendations supporting routine psychosocial assessment, these practices are not consistently integrated into perioperative cardiac care (Thompson & Pedersen, 2023). As a result, opportunities to identify and address psychological distress early in the surgical process are often missed.

The purpose of this Doctor of Nursing Practice (DNP) quality improvement project was to improve the identification and management of psychological distress in adult cardiac surgery patients. This was accomplished by implementing nurse-led psychosocial screening and multimedia educational interventions to enhance emotional preparedness and recovery outcomes.

The intended audience for this project includes cardiac surgeons, advanced practice providers, nurses, and healthcare administrators. The findings are intended to inform clinical practice, support integration of psychosocial care into perioperative workflows, and improve patient-centered outcomes within cardiac surgery programs.

Project Design and Implementation

This project utilized a quality improvement design guided by the Plan–Do–Study–Act (PDSA) framework, allowing for iterative evaluation and refinement within a real-world clinical setting (Berwick et al., 2008). The project was conducted at a large tertiary-care hospital in North Carolina and included a convenience sample of 20 adult patients scheduled for cardiac surgery.

The intervention consisted of three primary components. First, patients completed preoperative psychosocial screening using validated tools, including the PHQ-9 and GAD-7, to assess levels of depression and anxiety (Thompson & Pedersen, 2023). Second, patients participated in a virtual reality (VR) ICU orientation before surgery, designed to familiarize them with the postoperative environment and reduce fear of the unknown (Anderson et al., 2025).

Third, patients viewed a structured postoperative recovery education video that reinforced discharge instructions and provided coping strategies (Ni et al., 2022).

Data collection included both quantitative and qualitative measures. Quantitative data consisted of pre- and post-intervention anxiety and depression scores, as well as clinical recovery indicators such as mechanical ventilation duration, ICU utilization, and hospital readmissions. Qualitative data were collected through follow-up interviews conducted two to four weeks after surgery to evaluate patient perceptions of preparedness and emotional support. Descriptive statistical analysis was used to evaluate trends in outcomes, while qualitative feedback was analyzed to identify common themes related to patient experience and intervention effectiveness.

Results

The results of this project demonstrated that psychological distress is common among cardiac surgery patients, including individuals without a prior mental health diagnosis (McCann et al., 2023). The implementation of routine screening enabled early identification of these concerns. Following the intervention, patients experienced meaningful improvements in psychological outcomes. Depression scores decreased by 41%, and anxiety scores decreased by 58%, indicating a substantial reduction in emotional distress. Patients reported feeling more prepared for surgery and recovery, with decreased fear of the ICU environment and increased confidence in managing postoperative expectations.

Qualitative findings supported these outcomes, with patients describing the VR experience as helpful in reducing fear of the unknown and improving familiarity with the ICU setting (van Steenberg et al., 2022). The postoperative educational video was also well received and was described as more engaging and easier to understand than traditional written discharge instructions (Ni et al., 2022).

Clinical outcomes were favorable. Most patients required less than six hours of mechanical ventilation, consistent with fast-track recovery standards. There were no ICU bounce-backs and no 30-day hospital readmissions among participants. The majority of patients were discharged home with appropriate support. Overall, the results demonstrate that integrating psychosocial screening with multimedia education is both feasible and beneficial in routine cardiac surgical care.

Strengths and Limitations

This project had several strengths. The use of validated screening tools enhanced the reliability of psychological assessments (Thompson & Pedersen, 2023). The intervention was standardized, ensuring consistent delivery across participants. Additionally, the combination of quantitative and qualitative data provided a comprehensive evaluation of both clinical outcomes and patient experience. The project was conducted in a real-world clinical setting, supporting its practical applicability.

However, several limitations should be considered. The small sample size of 20 participants limits generalizability. As a quality improvement project, inferential statistical testing was not performed, and results should be interpreted as trends rather than definitive conclusions. The voluntary participation of patients may have introduced self-selection bias, as those with higher levels of distress may have been more likely to participate (Gorini et al., 2022). Additionally, workflow variability and patient readiness occasionally impacted the timing of intervention delivery.

Implications for Practice

The findings of this project have important implications for clinical practice, healthcare systems, and patient outcomes. For patients, the intervention improved emotional preparedness,

reduced anxiety, and enhanced confidence during a highly stressful experience. These improvements support better recovery and smoother transitions from hospital to home.

For healthcare providers, particularly nurses, this project reinforces the importance of addressing both psychological and physical needs. Integrating psychosocial screening and education into routine care strengthens the delivery of holistic, patient-centered care (Thompson & Pedersen, 2023).

For healthcare systems, the project demonstrates that these interventions can be incorporated into existing workflows without a significant burden. Improved psychological outcomes may contribute to better clinical outcomes, reduced complications, and enhanced patient satisfaction, aligning with national priorities such as the Quadruple Aim and Healthy People 2030 (Berwick et al., 2008). Finally, this project provides a scalable and adaptable model that can be applied to other surgical populations to improve psychosocial care and recovery outcomes.

Conclusion

This quality improvement project demonstrated that nurse-led psychosocial screening, combined with multimedia education, is a feasible and effective approach to improving emotional preparedness and recovery outcomes among cardiac surgery patients. The intervention was associated with significant reductions in anxiety and depression, positive patient experiences, and favorable clinical outcomes.

These findings support the integration of routine psychosocial assessment and structured educational interventions into standard perioperative care. Addressing both the psychological and physical needs of patients is essential to optimizing recovery and advancing high-quality, patient-centered healthcare.

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