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Educational Interventions for Coronary Artery Bypass Grafting: Reducing Anxiety and Supporting Recovery – A Narrative Review

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ABSTRACT

Background: To review evidence on educational interventions for patients undergoing coronary artery bypass grafting (CABG), with particular emphasis on educational materials such as oral explanations, videos, and other multimedia approaches, and their impact on anxiety and depression.

Methods: A narrative synthesis was conducted of 19 empirical studies, including randomised trials, quasi-experimental designs, feasibility studies, and pilot projects. Interventions covered preoperative nurse-led explanations, videos, peer-narrated clips, virtual reality tours, simulation training, smartphone or web applications, and combined education with relaxation, music, or massage. Outcomes of interest were measures of anxiety and depression, patient knowledge and satisfaction, and recovery outcome.

Results: Structured educational interventions consistently reduced preoperative anxiety across multiple settings. Video, audiovisual, and simulation formats produced reliable gains in patient knowledge and satisfaction and were often preferred to verbal or written information alone. Programmes that combined education with calming or practical supports (for example, music, relaxation, or simulation) produced larger effects on anxiety and some physiological markers. Longer or continuous interventions (web/app-based follow-up, counselling) showed greater reductions in depressive symptoms than single-session approaches. Several eHealth programmes reduced unplanned health care contacts and sped patient-reported recovery, but effects on hard clinical endpoints (ICU stay, readmission, mortality) were inconsistent.

Conclusion: Educational interventions, especially multimedia and hybrid models, help reduce anxiety and improve knowledge and recovery experience for CABG patients. Larger studies involving multiple centres with standardised outcomes and longer follow-up are needed to clarify effects on depression and clinical endpoints.

Keywords: Coronary artery bypass; Educational; Anxiety; Depression

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INTRODUCTION

Patients undergoing coronary artery bypass graft (CABG) surgery often suffer from high anxiety and depression before and during the operation (1–3). These emotional challenges can negatively affect surgical outcomes, increase postoperative complications, and slow down recovery (4,5). One of the best methods for patient preparation is preoperative education, which enhances both the physical and mental healing process (6). However, the traditional approach, which usually relies on an oral explanation or a booklet, may not always be sufficient (7). While existing guidelines and routine practices aim to provide patients with the necessary information, a significant gap persists between knowledge delivery and actual patient understanding. Many CABG patients struggle to recall complex medical explanations given under stressful conditions (8), leaving them insufficiently prepared for surgery and recovery (9).

Audiovisual, video or multimedia or known as modern/innovative education has emerged as a promising tool in perioperative care (10–13). It allows patients to visualise surgical procedures, recovery steps, and lifestyle changes in a structured and engaging way. Additionally, to standard verbal or written methods, modern/innovative education has been shown to improve understanding, retention of information, and patient satisfaction. Importantly, it also provides reassurance and reduces preoperative anxiety (13–15).

In Western countries, preoperative educational interventions have increasingly adopted digital and immersive technologies to enhance patient understanding and psychological readiness before surgery. In the Netherlands, a Virtual Reality–based patient tour was developed to help cardiac surgery patients visualise their hospital journey from admission to recovery (16). Similarly, in Hong Kong, a preoperative ICU video tour familiarised patients and their families with the surgical and postoperative environment, improving preparedness and engagement (17). These approaches demonstrate how multimedia tools can transform complex surgical information into relatable, patient-friendly experiences.

Across the Eastern and Southeast Asian regions, digital innovations in patient education have also gained momentum. In China, a Web-based-Information–Knowledge–Attitude–Practice (WIKAP) program provided continuous education to support postoperative recovery and adherence to care (18). In South Korea, audiovisual nursing information and video education were introduced to ease anxiety and environmental stress surrounding open-heart surgery (19,20). Meanwhile, in Malaysia, the MyEducation: CABG web-based application served as a locally relevant, nurse-led educational tool guiding patients throughout the perioperative period (8). Collectively, these initiatives illustrate the growing regional commitment to modern, patient-centred education that aligns with Malaysia's digital health direction.

The aim of this review is to explore whether innovative education makes a difference in the perioperative care of CABG patients, with a focus on psychological outcomes such as anxiety and depression, as well as overall recovery experiences. Because it allows for flexibility in synthesising findings from a variety of sources, such as observational studies, randomised controlled trials, or qualitative research, a narrative review approach was selected for this study (21). Unlike systematic reviews that are limited by strict inclusion criteria, narrative reviews are particularly useful for exploring broad topics and identifying emerging patterns when the evidence base is still heterogeneous.

METHODS

Review Design

This study gathered and analysed research on perioperative education for CABG patients that included an innovative component using a narrative review design. Because the evidence consists of a variety of quasi-experimental studies, randomised trials, and feasibility studies, a narrative approach was selected; flexibility makes it easier to combine these different findings.

Search Strategy

Electronic searches were performed in major databases, including PubMed/MEDLINE, Scopus, and Web of Science to identify relevant studies. Search terms combined concepts for coronary artery bypass (e.g., "CABG", "coronary artery bypass"), patient education (e.g., "patient education", "perioperative education"), and audiovisual formats (e.g., "video", "audiovisual", "multimedia"). The literature search encompassed studies published between 2016 and 2025, restricted to English-language publications. Additionally, the reference lists of all included articles were manually screened to identify any further eligible studies that met the inclusion criteria,

The following criteria had to be met for a study to be included: (i) adult patients undergoing CABG (ii) the intervention contained an audiovisual, video or multimedia or patient-education component (individually or in combination) or oral; and (iii) outcomes included anxiety or depression. Randomised controlled trials, quasi-experimental designs, and observational studies were eligible. Studies were excluded if they focused on editorial comments or conference abstracts without full data.

Titles and abstracts were first screened to remove clearly irrelevant records, followed by a full-text review to confirm eligibility (**Figure 1**). For each included study, key elements were extracted into a summary table using the PICO framework; Population; patients undergoing CABG, Intervention; pre and postoperative educational approaches (audiovisual, video or multimedia or patient-education component (individually or in combination) or oral; Comparison; usual care or standard information and Outcomes; anxiety and depression. Two reviewers (SAH and AD) performed extraction independently where possible and resolved differences by discussion.

Because this review integrates multiple study types, a simple critical appraisal was not applied to judge internal validity and reporting quality. After the assessment 19 studies was selected in this narrative review as in **Table 1** and **Table 2** summarized the characteristics and key studies of three included studies.

Figure 1: PRISMA diagram of the process used for screening studies (22)

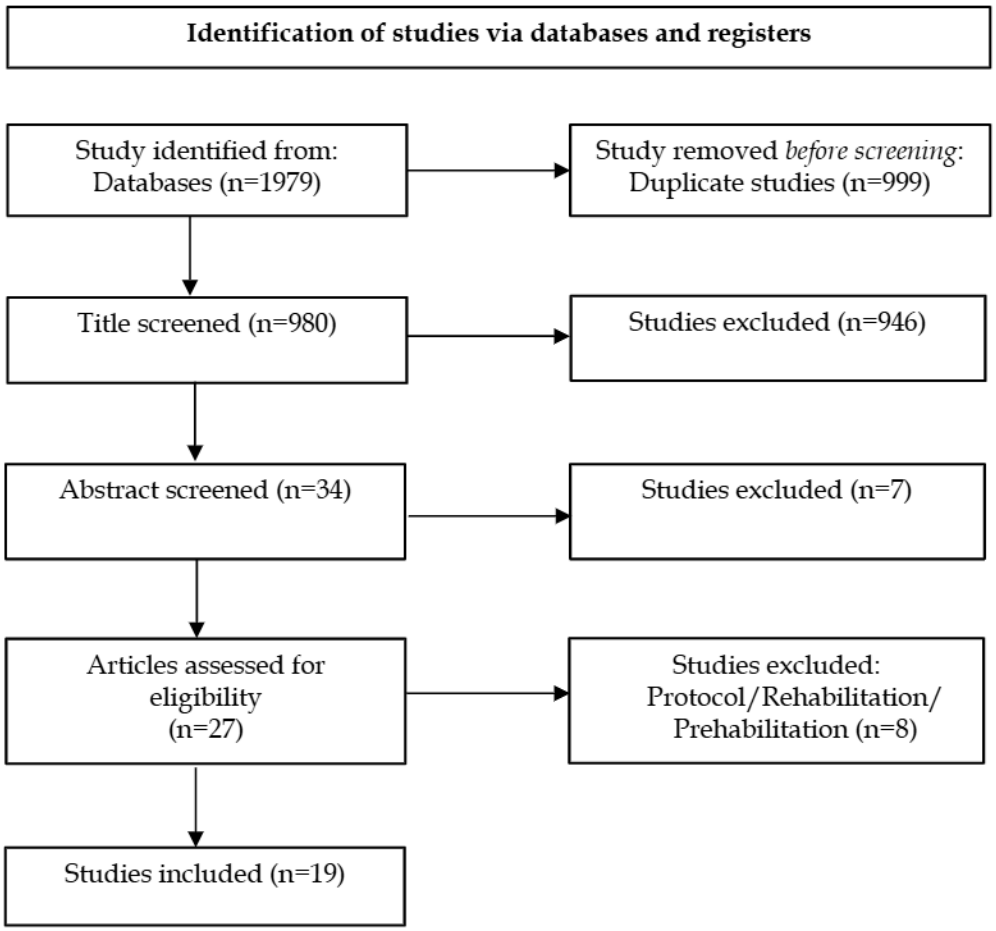

Table 1: The Studies Included in the Review (N=19)

No	Author(s)	Year	Title
1.	Kalkan A., Digin F.	2024	The effect of informing patients with video before cardiac surgery on intensive care experience: A randomized controlled trial
2.	van Rijn M.M., de Heer L.M., Nieuwenhuis-Wendt J., van der Kaaij N.P., Moolenaar E.G.E., van der Ham D.H., van der Plank L., Westland H., Weldam S.W.M.	2024	Use of virtual reality in preoperative education of cardiac surgery patients – A feasibility study
3.	Salehi M., Froutan R., Mazlom S.R.	2024	Efficacy of the Simulation-Based Education Approach Enhanced by Music on Anxiety, Physical Activity, and Respiratory Outcomes in Patients under Open Heart Surgery: A Randomized Three-Group Clinical Study
4.	Pedramrazi S., Mohammadabadi A., Rooddehghan Z., Haghani S.	2024	Effectiveness of Peer-Based and Conventional Video Education in Reducing Perioperative Depression and Anxiety Among Coronary Artery Bypass Grafting Patients: A Randomized Controlled Trial
5.	Li J., Deng Y., Jiang Y.	2024	The effectiveness of a web-based information-knowledge-attitude-practice continuous intervention on the psychological status, medical compliance, and quality of life of patients after coronary artery bypass grafting surgery: a parallel randomized clinical trial
6.	Jeon J.-Y., Kim D.-H., Kang K.	2023	Effect of audiovisual media-based nursing information on environmental stress, anxiety, and uncertainty in patients undergoing open-heart surgery
7.	Tuncer M., Yeşiltepe Oskay Ü.	2023	Effect of sexual counseling on sexual function and sexual quality of life for women undergoing open heart surgery: a pilot randomized controlled trial
8.	Nargiz Koşucu S., Şelimen D.	2022	Effects of Music and Preoperative Education on Coronary Artery Bypass Graft Surgery Patients' Anxiety
9.	Noor Hanita Z., Khatijah L.A., Kamaruzzaman S., Karuthan C., Raja Mokhtar R.A.	2022	A pilot study on development and feasibility of the 'MyEducation: CABG application' for patients undergoing coronary artery bypass graft (CABG) surgery
10.	Awaludin S., Nurachmah E., Soetisna T.W., Umar J.	2022	The effect of a smartphone-based perioperative nursing intervention: Prayer, education, exercise therapy, hypnosis, and music toward pain, anxiety, and early mobilization on cardiac surgery
11.	van Steenbergen G., van Veghel D., van Lieshout D., Sperwer M., ter Woorst J., Dekker L.	2022	Effects of Video-Based Patient Education and Consultation on Unplanned Health Care Utilization and Early Recovery After Coronary Artery Bypass Surgery (IMPROV-ED): Randomized Controlled Trial
12.	Ali A., Masih S., Rabbi F., Rasheed A.	2021	Effect of nurse led education on anxiety level among coronary artery bypass grafting pre-operative patients
13.	Lai V.K.W., Ho K.M., Wong W.T., Leung P., Gomersall C.D., Underwood M.J., Joynt G.M., Lee A.	2021	Effect of preoperative education and ICU tour on patient and family satisfaction and anxiety in the intensive care unit after elective cardiac surgery: A randomised controlled trial
14.	Pazar B., Iyigun E.	2020	The effects of preoperative education of cardiac patients on haemodynamic parameters, comfort,

			anxiety and patient-ventilator synchrony: A randomised, controlled trial
15.	Chandrababu R., Nayak B.S., Pai V.B., N R., George L.S., Devi E.S., George A.	2020	Effects of foot massage and patient education in patients undergoing coronary artery bypass graft surgery: A randomized controlled trial
16.	Farid Z., Siddiqeh M., Aziz R., Fayaz F.-E., Khurshid H., Khan L.S., Rehman J.A.	2020	Evaluation of the efficacy of cardiac surgical orientation video in decreasing preoperative anxiety in pakistani population
17.	Ertürk E.B., Ünlü H.	2018	Effects of pre-operative individualized education on anxiety and pain severity in patients following open-heart surgery
18.	Kalogianni A., Almpani P., Vastardis L., Baltopoulos G., Charitos C., Brokalaki H.	2016	Can nurse-led preoperative education reduce anxiety and postoperative complications of patients undergoing cardiac surgery?
19.	Lee W.J., Lee M.J., Kang S.G., Bang Y.Y.	2016	The effects of video information on delirium, anxiety, and nursing satisfaction of heart surgery patients

Table 2: Characteristics and Key Findings of Included Studies (n=19)

No	Author/ Methodology/ Sample size	Strategy (PICO)	Summary of result
1.	Jeon et al. (2023) Quasi experimental N=147 IG:75 CG:72	P-open heart surgery I-audiovisual (Video+PPT) C-written O-enviromental stress, anxiety and uncertainty	Audiovisual media-based nursing information effectively reduces environmental stress, anxiety, and uncertainty in patients undergoing open-heart surgery.
2.	Pedramrazi et al. (2024) Random controlled trial N=114 57 each group	P-CABG I-Video: conventional/ peer C-pamphlet with explanation O-anxiety, depression	1. Peer-based video education is more effective in controlling preoperative anxiety in patients undergoing CABG surgery compared to conventional video education and standard education. 2. Both peer-based and conventional video education were equally effective as standard education in reducing anxiety and depression levels 4 weeks after surgery.
3.	Nargiz Koşucu et al. (2022) Quasi-experimental design N=214 IG:101 CG:113	P-CABG I-video and music C-standard care O-anxiety, quality of life and physiological responses	1. The dual integrative nursing intervention effectively reduced anxiety levels in CABG patients. 2. Physiological responses such as blood pressure and heart rate were significantly lower in the experimental group. 3. The experimental group had a shorter length of hospital stay and better quality of life.
4.	Noor Hanita et al. (2022) Quasi-experimental design N=45 IG: 23 CG: 22	P-CABG I-Application using smartphone C-standard care O-anxiety and depression	1. Anxiety score; intervention group scored lower. 2. Depression score; no significant in pre-operative and time of discharge but significant differences in one-month after discharge.

5.	Awaludin et al. (2022) Quasi-experimental N=86 43 each group	P-open heart surgery I- Application using smartphone C-standard care O-anxiety, pain, early mobilization.	1. Significant on pain scale on the first, second, and fifth day after surgery, pre-operative anxiety scores, and early mobilization on the first, second, fourth, and fifth day after surgery. 2. Significant in reduce anxiety level as well as early mobilization.
6.	Lai et al. (2021) Randomised controlled trial N=100 50 each group	P-open heart surgery I-audiovisual (Video+PPT) C-standard care O-satisfaction, anxiety, depression	Preoperative education improved patient and family satisfaction levels and may decrease patients' anxiety levels.
7.	Chandrababu et al (2020) Randomised controlled trial N=130 65 each group	P-CABG I- Verbal guidance and foot massage C-information from cardiac surgeon O-anxiety, fatigue, pain, self-efficacy, and quality of life	Experimental group had a significant decrease in anxiety, fatigue, pain and increased self-efficacy quality of life
8.	Lee et al. (2016) Quasi-experimental N=50 25 each group	P- open heart surgery I- Video C- traditional medium O- Delirium, anxiety and nursing satisfaction.	Providing preoperative video information did not significantly impact delirium incidences but led to improvements in anxiety levels and nursing satisfaction.
9.	Ertürk & Ünlü (2018) N=50 25 each group	P-Open heart surgery I-Education on the patients's needs C-No education given O-anxiety, pain	Significant relationship between mean pre- and post-operative state anxiety scores and mean pain scores.
10.	Kalkan & Digin (2024) Randomized controlled trial N=90 IG:45 patients CG:45 patients	P-Cardiac surgery I-Video+Routine care C-Routine care O-Experiences in ICU	Total score on Intensive Care Experiences of the experimental group was significantly higher than control group.
11.	Pazar B, Iyigun (2020) Randomized controlled trial N=200 IG:100 patients CG:100 patients	P-Cardiac surgery I-Preoperative education on mechanical ventilation and the usage of the communication Panel that patients under mechanical ventilation use to communicate with health personnel C-No education O-Haemodynamic parameters, patient comfort and anxiety, and patient-ventilator synchrony provided to patients before they undergo cardiac surgery.	The difference between the anxiety scores during mechanical ventilation, which were obtained from the patients in the intervention and control groups, were statistically significant.
12.	Van Rijin et al. (2024) Cross-sectional study N=35	P- elective cardiac surgery I-Virtual Patient Tour (VPT) C-N/A O- Anxiety	-The anxiety median total score was relatively low -VPT has high acceptability, acceptable usability, and high tolerability in participants.
13.	Salehi et al. (2024) Randomised controlled trial N=90	P- awaiting CABG surgery I- 1.Demonstration and return-demonstration 2. instrumental music	Significant effect in immediate post-intervention and 2-day follow-up periods across all outcome measures except for activity. Post hoc tests

	IG1: 30 IG2: 30 CG: 30	C- conventional instruction O- pulmonary outcomes, anxiety, and physical activity	demonstrated substantial variations in effect sizes between intervention and control groups. Both intervention groups had significantly greater impact than the control group, particularly the composite group, showing heightened effects in state and trait anxiety and respiratory scores.
14.	Farid et al. (2020) Cross sectional study N=118	P- cardiac surgery I- video clip C- no comparison O- anxiety and knowledge	The difference in mean anxiety score related to Anaesthesia, Surgery, Combined Surgery & Anaesthesia, and the difference in the Information Desire before and after the intervention (watching video clip) was found statistically significant.
15.	Li et al. (2024) Randomized clinical trial N=174 IG: 87 CG: 87	P-underwent CABG I-web-based Information-Knowledge- Attitude-Practice (WIKAP) C-usual care O-anxiety, depression, medical compliance, and QoL	1. The depression rates were significantly lower in the WIKAP group compared to those in the control group 2. There was no significant difference in HADS-A scores between the Control group and the WIKAP group at M0, M3 or M6 time points However, the HADS-A scores were significantly reduced in the WIKAP group at M9 and M12.
16.	Tuncer & Yeşiltepe (2023) Pilot randomized controlled trial N=64 IG:32 CG:32	P-undergoing open heart surgery I-Program and Booklet C-Routine O-Depression, Quality of Life and Sexual function	1. The rate of sexual intercourse was significantly higher in IG women 2. Depression; no significant difference between the groups before the counseling there was a statistically significant difference between them after the counselling.
17.	Van Steenbergen et al. (2022) Single-blind randomized controlled trial N=280 IG:140 CG:140	P- CABG surgery I- online education videos and video consultations C- standard care O- anxiety and progress of recovery.	RI-10 score; indicating patient-reported recovery, was significantly higher in the intervention group in the 3rd and 6th weeks after discharge. HADS; nonsignificant difference in measured anxiety found
18.	Ali et al. (2021) Randomised controlled trial N=80 IG:40 CG:40	P- undergoing CABG I- Nursing education C- No comparison O- anxiety	Anxiety reduced significantly in post-assessment among experimental group participants
19.	Kalogianni et al. (2016) N=395 IG:205 CG:190	P- undergoing CABG I- information from specially trained nurse C- standard care O- level of state anxiety, the complications in the ICU and in the ward of the cardiac surgery department, the duration of tracheal intubation in hours, the length of ICU stay, the length of hospital stay, hospital readmission	Reduced the anxiety 3–4 days before the heart operation

RESULTS

The included studies demonstrated a variety of educational approaches that could be grouped into three. Traditional in-person methods included nurse-led education sessions (15,17,28,36,38) and individualized psychosocial support (34). Technology-enhanced approaches comprised audiovisual education(19), smartphone-based multimodal (8,26), eHealth platforms and web-based applications (18,35), simulation (16,32,39) and as well as video-based resources (19,20,24,29,35). Adjunctive or complementary methods included music therapy (14), foot massage education (38), and sexual counselling using the PLISSIT model (34).

Findings were organised thematically into several categories. These themes included effects of education on anxiety, effects of education on depression, patient knowledge and satisfaction and recovery and clinical outcomes. Within each theme, study-level findings were summarised and compared.

Effect of Educational on Anxiety

Preoperative anxiety in patients having CABG has been shown to be reduced by a variety of perioperative educational programs. These interventions range from traditional strategies like nurse-led education and psychoeducation to more contemporary educational techniques like simulation, video-based learning, and eHealth apps.

In studies using nurse-led education, patients who received structured and personalised teaching sessions experienced a marked decline in anxiety compared with those who received routine care. Ali et al. reported that individualized, nurse-led sessions focusing on surgical preparation and postoperative recovery led to significantly lower mean anxiety scores after the intervention[23] with median (IQR) score for the experimental group was 19.0 (17.2–21.0), while that for the non-experimental group was 25.5 (22.0–28.0), $p<$ 0.001(36). Similarly, found that patients in the intervention group showed a statistically significant reduction in anxiety as measured by the State-Trait Anxiety Inventory, the mean decreased from 36.1 ± 9.6 to 34.0 ± 8.4, $p<0.001$ (15). The control group, however, did not receive any educational input.

Several studies integrated educational sessions with complementary relaxation techniques. For instance, other educational programmes supplemented with music therapy produced greater reductions in preoperative anxiety compared with education alone mean pre= 59.90 ± 8.03, mean post=41.33±10.43, $p<0.001$ (14), suggesting that integrating relaxation with education can enhance feelings of calm and adaptation to information (14,32).

In recent years, technology-enhanced education has emerged as an effective and scalable method for lowering anxiety. Short, educational videos and audiovisual nursing materials provided prior to surgery significantly reduced anxiety levels compared to standard information delivery methods. In a study, mean anxiety scores decreased from 4.21±2.10 prior to viewing the video to 2.90±1.86 subsequently. Lee et al. reported a significant decrease in anxiety levels within the experimental group, from 37.5±7.58 prior to viewing to 25.8±10.39 following the intervention $p<0.001$ (20).

According to similar findings from other multimedia and video-based programs (24,35), intervention groups continuously displayed lower anxiety scores than control groups; 74.5±3.9 and 63.9±6.4 respectively, $p<0.001$. In order to help patients better comprehend their care pathway and retain important information, these tools frequently included animation, narration, and visual explanations. Mobile and web-based applications (8,13) also provided accessible, self-paced learning platforms that reinforced understanding and emotional preparedness. Patients who used these tools demonstrated significant improvements in anxiety compared with those who received standard education, indicating that digital accessibility and repeated exposure supported sustained anxiety reduction.

Effect of Educational on Postoperative Depression

The analysis of depressive outcomes revealed that the effectiveness of educational interventions was critically dependent on their duration and methodological approach. Short-term or conventional educational methods demonstrated limited specific efficacy. In a three-arm trial, while depression scores decreased in all groups from baseline to 4 weeks post-surgery, there was no statistically significant difference between the peer-based video (8.0±3.79 to 6.05±3.32), conventional video (7.47±4.03 to 5.79±3.61), and control groups (8.97±4.94 to 6.48±3.77) at the postoperative assessment (p=0.721) (24). This finding aligns with that of Lai et al., where a

multifaceted preoperative education session showed no significant evidence of reducing patient depression scores postoperatively (Mean Difference -0.6, 95% CI -2.3 to 1.2, p=0.525). Conversely, structured and sustained interventions yielded significant improvements. The "MyEducation: CABG" application resulted in a significantly greater reduction in depression scores in the intervention group (11.25±2.73 to 3.9±3.1) compared to the control group (10.00±2.23 to 8.2±3.25) at one-month post-discharge (p=0.015) (8).

This was further supported by the long-term web-based IKAP intervention, where HADS-D scores were significantly lower in the intervention group at 9 months (p=0.008) and 12 months (p=0.001) compared to controls (18). Beyond general education, targeted psychosocial counseling proved highly effective. A sexual counseling program using the PLISSIT model led to a significant decrease in Beck Depression Inventory scores within the intervention group (19.06±8.92 to 11.93±9.88, p=0.001), with a final score significantly lower than that of the control group (20.37±10.35, p<0.001)(34) . These results indicate that while brief educational interventions are comparable to standard care, multi-session, interactive, and tailored programs produce statistically superior and clinically meaningful reductions in postoperative depression.

Patient Knowledge, Understanding, and Satisfaction

Educational interventions consistently improved patient knowledge, understanding of the surgical process, and satisfaction with care among CABG patients. Structured nurse-led education significantly enhanced patients' comprehension of preoperative and postoperative care routines compared to standard briefings (15,36). Participants in the intervention groups demonstrated higher mean knowledge scores and reported feeling more prepared for surgery and recovery.

Video-based and other technology-enhanced interventions also produced substantial gains in patient understanding (13,24,29,33,35). Patients who viewed educational videos or used mobile applications showed significantly greater recall of procedural information, medication instructions, and postoperative precautions than control groups (p<0.05). For instance, Farid et al. reported that video-assisted learning increased mean knowledge retention scores (33) by while Pedramrazi et al. found significant improvements in patient-reported understanding of anesthesia and recovery care (24).

Furthermore, satisfaction with the educational experience was consistently higher among participants receiving structured or multimedia-based education. In studies using patient satisfaction surveys, those who received video or eHealth interventions rated the educational content as more engaging, clearer, and easier to understand than traditional verbal briefings (13,35). Reported satisfaction scores were significantly higher with participants emphasizing the value of repeated access to digital materials and the clarity of visual explanations.

Recovery and Clinical Outcomes

Some education programmes showed benefits for recovery measures. A combined music and preoperative education intervention reduced physiologic stress markers and shortened length of stay (14). Multimodal bundles (education plus massage, exercise, or hypnosis) improved pain control, early mobilisation, and self-efficacy factors that support faster recovery (26,32,38).

At the service level, an eHealth programme that combined online education videos with scheduled video consultations reduced unplanned healthcare use and sped patient-reported recovery within six weeks (35). Feasibility studies of virtual reality tours showed high acceptability, suggesting potential to scale immersive orientation as part of recovery support (16). However, several trials found no effect of education on hard endpoints such as intensive-care length of stay or readmission, indicating that psychological gains do not always translate into short-term clinical metrics (15,40).

DISCUSSION

This review found clear and consistent evidence that structured perioperative education helps patients undergoing CABG or other open-heart surgery. The educational video intervention was found to be significantly more effective than the traditional education method in reducing anxiety among patients undergoing CAB (24). This could be attributed to its visual and auditory elements, which enhanced patients' understanding, engagement, and information retention. The video format allowed patients to review the content at their own pace, promoting better comprehension and self-preparedness before surgery.

Short, focused videos and audiovisual nursing information lowered preoperative anxiety in several studies, supporting the effectiveness of multimedia education in reducing uncertainty and promoting a sense of control prior to surgery (20,33). Comparable results have been reported in earlier research indicating that video-based education improves patients' psychological readiness compared with conventional verbal or leaflet-based approaches.

Additionally, the intervention was linked to decreased levels of postoperative depression. Patients who viewed the educational video appeared to be more emotionally prepared and composed prior to surgery, which may have helped their recovery (24). The structured and reassuring content may have provided them with a greater sense of control and optimism, both of which can serve as shields against depressive symptoms. Nevertheless, depression exhibited a differing pattern.

During the immediate perioperative period, depressive symptoms were rarely significantly altered by single-session education alone(24). Conversely, programs that incorporated education, counselling, and emotional support or persisted beyond discharge exhibited a greater efficacy in alleviating depression over time. This implies that although educational videos can assist patients in preparing mentally, depression may necessitate ongoing or more personalised support to achieve long-term improvement.

The review also shows strong and consistent improvement in knowledge and satisfaction. Patients who watched videos, experienced simulation, or received audiovisual ICU tours reported better understanding and higher satisfaction with care (19,29,41). Allowing patients and family members to replay or review material outside the hospital was repeatedly mentioned as a practical advantage (8,33). Improved knowledge often translated into greater confidence for self-care after discharge.

Combining education with calming or practical supports produced added benefits. Interventions that bundled music, prayer, massage, exercise, or hypnosis with education tended to give larger improvements in anxiety, pain, mobilisation, and some physiological markers (14,26,32,38). These multimodal programmes appear useful because they address both informational needs and emotional regulation.

From a clinical perspective, video-based eHealth approaches show promise for reducing unplanned health contacts and supporting faster perceived recovery (35). Virtual reality tours were feasible and acceptable in a small study and may offer an immersive way to prepare patients(16). At the same time, not all clinical metrics changed, several trials found no difference in intensive care length of stay or readmission despite psychological benefit (15,40). This indicates that educational programmes alone may not alter all short-term clinical outcomes unless integrated into broader care pathways.

Overall quality and consistency of evidence varied. Many randomised and quasi-experimental studies were included, but designs, sample sizes, timing of interventions, and outcome measures differ widely. Some trials were small or single-centre, limiting generalisability. Reports often gave only partial information about whether the intervention was delivered as intended, how much patients actually engaged with it (for example, how much of a video they watched), and what resources or costs were involved. These gaps make it hard to identify which exact video elements or delivery schedules are most effective.

CONCLUSION

In conclusion, integrating structured and innovative educational approaches, particularly video-based interventions, offers substantial benefits for CABG patients. By addressing psychological distress, enhancing knowledge, and empowering patients, education can serve as a cornerstone of perioperative care that ultimately improves both individual outcomes and system-level efficiency.

IMPLICATIONS AND RECOMMENDATIONS

The findings from this narrative review suggest that perioperative education is a vital component of care for patients undergoing CABG, particularly in addressing psychological challenges such as anxiety and depression. Educational interventions have demonstrated positive effects on improving patients' knowledge, enhancing preparedness for surgery, and promoting psychological well-being. These outcomes are significant because pre- and postoperative psychological health directly influence recovery journey, treatment adherence, and long-term quality of life.

For clinical practice, the implication is clear, patient education should be systematically

integrated into the perioperative care pathway. While conventional methods such as verbal counselling and printed materials remain useful, their effectiveness can be limited by variability in delivery and patient recall. Video-based education offers an innovative solution by providing standardised, accessible, and repeatable information. Such interventions not only ensure consistency but also allow patients and families to review content multiple times at their convenience. A blended approach combining face-to-face interactions with multimedia resources may therefore represent the most effective strategy for patient support.

This review highlights the importance of conducting more rigorous and carefully designed studies to build a more reliable evidence base. Future research should focus on large-scale randomised controlled trials that evaluate both psychological and clinical outcomes, such as complication rates, hospital readmission, and long-term lifestyle modifications. Furthermore, studies should consider patient diversity by addressing differences in health literacy, cultural background, and digital accessibility, ensuring that interventions are inclusive and equitable.

At the policy level, structured patient education should be recognised as a cost-effective strategy for improving surgical outcomes. Hospitals and health systems are encouraged to allocate resources for the development of standardised, evidence-based educational tools that can be incorporated into perioperative protocols. Such investment has the potential to not only improve patient satisfaction and recovery but also reduce healthcare costs associated with complications and prolonged hospital stays.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest regarding this research. This study forms part of the requirements for the Doctor of Philosophy (PhD) degree in Nursing, and no financial, personal, or professional interests influenced the design, conduct, or reporting of the study.

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AUTHORS CONTRIBUTIONS

SAH: Conceptualization, designed the narrative review method and search strategy. Literature search, prepared the initial manuscript draft.
AD: Developed the study idea and defined the objectives.
TS@SJ and HHMM: Independently checked the extracted data for accuracy.
ZH: Conducted the database searches, screened titles, abstracts, and extracted data.

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