Fu, J.; Li, L.; Jiang, J.; Wang, W. (2022). Impact of safety management on mental health and quality of life in perioperative care of fitness players undergoing cardiac intervention. Revista Internacional de Medicina y Ciencias de la Actividad Física y el Deporte, 22(88.1), 78-88.
DOI: https://doi.org/10.15366/rimcafd2022.22.88.1.007

ORIGINAL

IMPACT OF SAFETY MANAGEMENT ON MENTAL HEALTH AND QUALITY OF LIFE IN PERIOPERATIVE CARE OF FITNESS PLAYERS UNDERGOING CARDIAC INTERVENTION

Jiaqing Fu1, Li Li1, Keran Jiang1, Wenjie Wang1*

1Beijing Anzhen Hospital,Capital Medical University，Beijing，100029，China
*Corresponding author：Wenjie Wang
Email: wwwjj34165@163.com

Received April 30, 2020
Accepted June 26, 2020

ABSTRACT

Purpose: To explore the impact of safety management on the perioperative psychological well-being and well-being of fitness players undergoing cardiac interventions. **Methods:** In our hospital, 294 fitness players who underwent cardiac intervention from June 2019 to January 2022 were divided into 2 groups according to the different care modalities, with those undergoing routine care being the control group and those undergoing safety management being the study group. The two groups were compared for improvement of negative emotions, quality of life, complications, cardiac function, satisfaction, and nursing effects. **Results:** Before taking into account, there was no huge contrast on sas and sds scores between the 2 groups (p>0.05), and in any case, after taking into account, there was a profound critical decrease in sas and sds points in both groups,However, in this comparison, the decrease in the research group was clearly greater than that of the study group (p<0.05), and the quality of life experience difference was not very significant for the two groups before the care was provided. Before care, the two groups were compared and no significant difference was found in the quality of life experience of the respective fitness players (p>0.05), but after systematic care, the marks of personal satisfaction achieved by the tandem groups did not increase very significantly, The comparison revealed that the improvement in the study group was more noteworthy than the comparison group (P<0.05); it was learned that the two-point extent of improvement in the study group was 96.23%, higher than the comparison group (96.35%), and the comparison between the above both groups was statistically significant;In the study comparison of complications, it was found that the probability of the study

group was 3.52% less than that of the comparison group (8.55%). However, before the care, there was no highly noticeable improvement in cardiac function between the two groups (P>0.05), on the other hand, after the care, the improvement in cardiovascular function was significantly larger in the study group than in the comparison group (P<0.05).; There was no obvious comparison between the nature of care and nursing error scores of the groups before nursing care was performed (P>0. 05), while after nursing care, the nature of care and nursing error scores of both groups basically improved, although the increment of the difference was greater in the study group than in the comparison group, and the degree of improvement was more significant (P<0. 05). **Conclusion:** Nursing safety management plays an important role in the perioperative care of fitness players undergoing cardiac interventions, contributing to improved mental health and quality of life, and with good patient prognosis. Therefore, the nursing management approach is worth promoting and applying.

KEYWORDS: nursing safety management; cardiac interventional fitness players; nursing outcomes; cardiac function

Interventional cardiac procedures are now commonly used to treat heart disease and their effectiveness is widely recognized. Common cardiac procedures include coronary stents, radiofrequency ablation and implantation of artificial pacemakers. With the continuous development and progress of medicine and medical treatment, people's demands for medical treatment, health, and services are becoming higher and higher (Chen et al., 2020), especially nursing services are facing new challenges and the operational model of nursing management is inevitably changing (Benesch et al., 2021). At this stage, (Liu, Zhong, Ou, & Peng, 2021) it has become imperative to change the operational model of nursing management (Weibel et al., 2020). The use of certain nursing interventions during cardiac interventions can play a key role in the effectiveness of cardiac interventions (Todd & Vigersky, 2021). The focus of this study is to explore the safety management issues surrounding the implementation of nursing care for fitness players undergoing cardiac interventions during the surgical period (Colla, Carvalho, & Remor, 2019; Mehta et al., 2017).

The perioperative safety management of cardiac surgery has been a major concern for fitness players and their families since cardiac surgery has been widely used in the clinical management of heart disease (Awaludin, Nurachmah, Soetisna, & Umar, 2022). Safety management of care refers to the avoidance of structural or physiological injuries, damages, defects, and deaths that are not permitted by law or legal procedures when treating and examining fitness players undergoing cardiac interventions. In this regard, the implementation of clinical care safety management for fitness players undergoing cardiac interventions in our hospital has largely improved the

quality of clinical care and reduced the incidence of clinical treatment errors, as analyzed below (Aresti, Malik, Ihsan, Aftab, & Khan, 2014).

1 DATA AND METHODS

1.1 General information

A grand total of 294 fitness players received cardiac interventions at our hospital between June 2019 and January 2022 and were then grouped again by the type of care given to them: Control group (n=152), 77 men and 75 women, aged 20-74 years, mean age (56.82±2.69) years, mean body mass index (25.38±3.03) kg/m2; study group (n=142), 73 males and 69 females, age 20-75 years, mean age (56.71±2.65) years, mean body mass index (25.37±3.01) kg/m2 (Zhao et al., 2021).

Inclusion criteria: (1) no contraindications to the procedure were found after routine preoperative examination; (2) fitness players voluntarily chose to undergo cardiac intervention due to their medical condition; (3) all fitness players were basically literate, conscious, and able to perform moderate activities (Brody, Grover, Lindquist, & Vedlitz, 2010).

Exclusion criteria: (1) a history of psychiatric disorders and family history excluded; (2) organic brain disease excluded; (3) cardiac surgery and surgery excluded; (4) blindness and deafness excluded (Gomes do Carmo et al., 2021).

1.2 Methods

1.2.1 Routine care:

Key areas include assessing pre- and post-operative care, reducing patient anxiety symptoms, monitoring vital signs and assisting fitness players with various tests (Eberhardt et al., 2021).

1.2.2 Security management.

(1) Nursing staff management. Formulate corresponding rules and regulations, correct and discipline nursing staff for various errors in the actual nursing process, etc., evaluate the quality of nursing care and formulate evaluation rules, mainly including nursing staff's quality of care, responsibility, professional knowledge, workload, etc., in order to provide timely, efficient, effective and safe services to fitness players (Atwood & Wadlund, 2015); (2) Psychological nursing management. Timely attention and smooth communication with fitness players undergoing cardiac surgery, telling them about heart diseases and related precautions, guiding them to actively cooperate with the attending physicians, and reducing their panic as much as possible.(3) Strengthen the management of the cardiac catheterization

laboratory (Theologou, Giakoumidakis, & Charitos, 2018). The cardiac catheterization laboratory is an important site for monitoring and treating cardiac interventions. In addition to the general characteristics of an operating room, it also has the special characteristics of an interventional room and therefore requires targeted and special management (Engorn et al., 2017). Medical and nursing staff must adhere to strict and appropriate procedures to manage the cardiac catheterization laboratory and to provide a solid foundation for future patient care (Khanna et al., 2020). In addition, special personnel should be responsible for the management of the cardiac catheterization laboratory, the collection, inventory and storage of items, and the timely replenishment and cleaning of expired medications, and the strict implementation of aseptic management systems (Lowe & Lightfoot, 2020). Strengthen the care and management of emergency supplies in the cardiac catheterization laboratory. Emergency items should be managed and kept by a dedicated person and collected by a dedicated person. In addition, toxic and narcotic drugs should be stored under double lock. When handing over shifts, there should be a double count of drugs and signatures on each shift to ensure that the items and drugs in the cardiac catheterization laboratory are not lost (Lacey et al., 2019), complete and functioning properly. Special attention should be paid to the fixed and quantitative storage of emergency items and drugs in the cardiac catheterization laboratory; (4) Health education care. Effective quality care is needed in the perioperative period, and nursing staff should provide warm and active services to make patients feel warm and affectionate, thus enabling them to relax effectively both physically and mentally and ensuring the best treatment effect (Smith, 2020). As the age span of cardiac surgery fitness players is relatively large, middle-aged and elderly patients often have serious negative emotions, while young adults are more likely to be affected by life and work stress, so medical and nursing staff should communicate with them and do a good job of psychological guidance in a timely manner, and provide health education about their condition and health knowledge to reduce fitness players discomfort and stress and improve their confidence and compliance with treatment (Okolie et al., 2022).

1.3 Observation indicators

1.3.1 SAS, SDS scores: Unhappiness and sadness were investigated by applying scales from the Self-Rating Scale for Depression (SDS) and the Self-Rating Scale for Anxiety Disorders (SAS) on a scale of 53, 53-62: mild melancholy and nervousness; 63-72: intermediate gloom and nervousness; and at least 72: extreme despair and nervousness.

1.3.2 Quality of life: The Home Enhancement Scale is used to assess the health of the patient's quality of life., including three main aspects: physical function, psychological function and social function.

1.3.3 Satisfaction: Patient satisfaction survey method: At the end of each bed day, the patient satisfaction assessment form developed by our department and filled out by the patient or family members was hung, and collected and counted by the responsible team leader at the time of discharge, and divided into three aspects: general, qualified and unqualified according to the collected data, late detail care, health education explanation to medical staff, and post-surgical family care.

1.3.4 Complications: Random home visits to fitness players three months after their surgery, and the number of fitness players with one-time angina pectoris, puncture site bleeding, vagal reflex, and urinary retention were counted, and the percentage was calculated.

1.3.5 Cardiac function: the patient's pulmonary function was tested by applying a cardiac function tester [9], and the relevant operations were carried out in strict accordance with the instructions; the more the values converged to normal values, the more ideal the care effect was.

1.3.6 Nursing care effectiveness: the quality of care provided by the nursing staff in the two groups was assessed using three questionnaires: nursing care error questionnaire, nursing care quality questionnaire, and nursing care satisfaction questionnaire, which were all based on percentages.If the caregiver makes fewer mistakes in the process of care, this would indicate a higher scoreThe higher the score, the better the quality of care provided by the nursing staff; the higher the score, the higher the patient's satisfaction with the nursing staff or care.

1.4 Statistical methods

With the processing of the data we used the SPSS 25.0 program, while the measurement data is expressed in () and checked by t, the count data can be expressed in n (%) and tested by $\chi 2$, with $P < 0.05$ indicating statistically significant differences, and the study was conducted using GraphPadPrism8 as the graphing software.

2 RESULTS

2.1 Comparison of SAS and SDS scores between the two groups

Before care, there was no significant error between the SAS and SDS ratings of the two groups ($P>0.05$). Following care, SAS and SDS ratings essentially decreased in both groups, but the decrease was greater in the review compared to the baseline group ($P<0.05$).(see Figure 1).

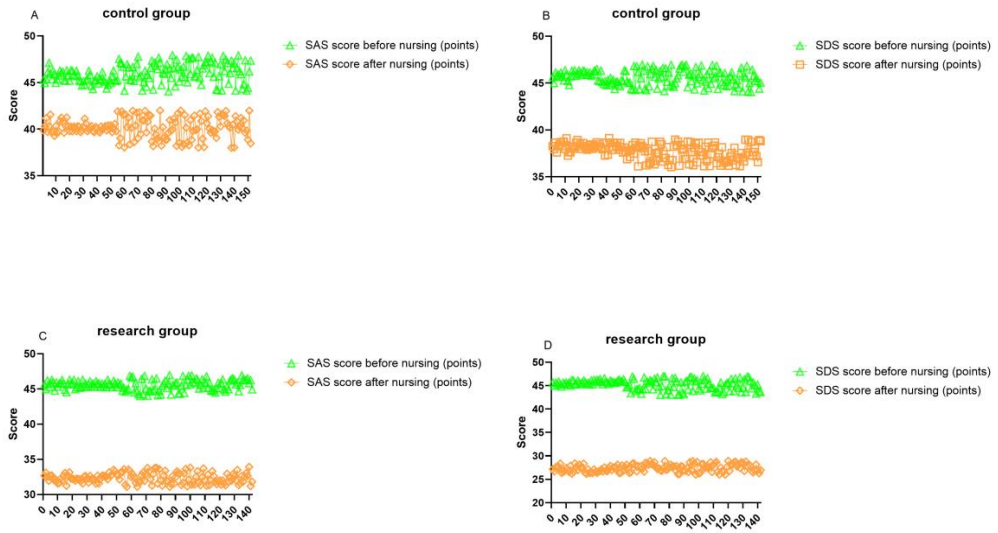

Figure 1 Comparison of SAS and SDS scores between the two groups

2.2 Comparison of quality of life between the two groups

There were no highly significant changes in the survival experience in terms of value for money between the groups before the fitness players were cared for (p>0.05). After care, the improvement of quality of life marks was significant in the two groups, but the study group showed a greater improvement than the control group (P<0.05).. (see Figure 2).

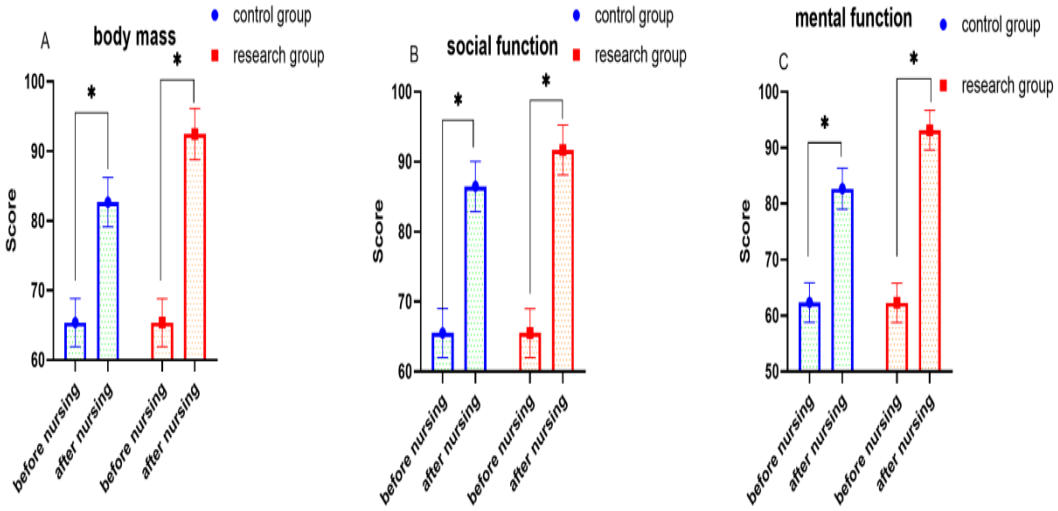

Figure 2 Comparison of quality of life between the two groups

2.3 Comparison of satisfaction between the two groups

The satisfaction rating for the study group was 96.23%, higher than the 96.35% for the control group, and the comparison between the groups showed a statistically significant difference.(seeFigure3).

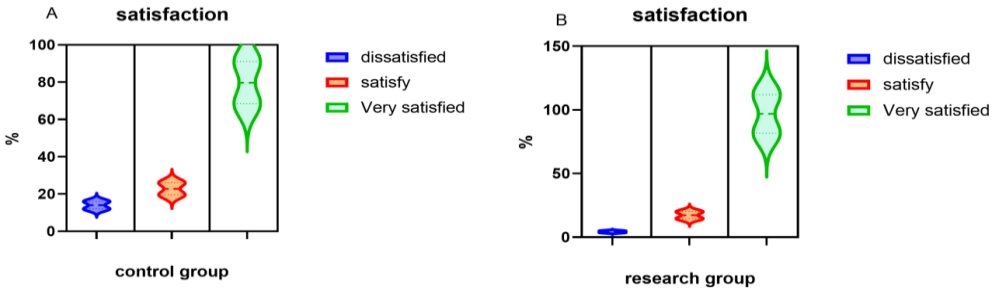

Figure 3 Comparison of satisfaction between the two groups

2.4Probability of complications compared among the both sets

In terms of complication rate the study group was 3.52%, which was less compared to the comparison group of 8.55%, and a statistically significant comparison between the two groups could be found.(see Figure 4).

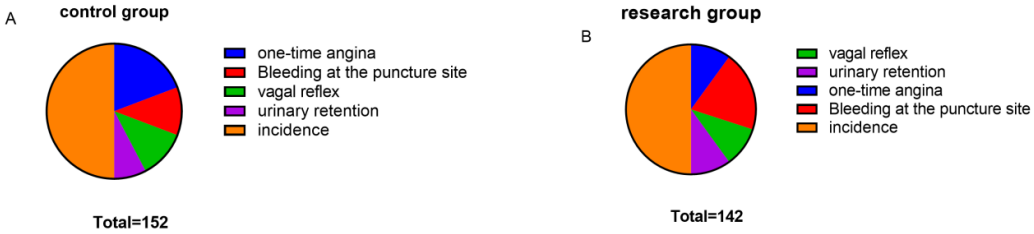

Figure 4 Comparison of complications between the two groups

2.5 Comparison of cardiac function between the two groups

Before treatment, there was no significantly higher difference between the two groups in terms of cardiac function indicators (P>0.05). After care, cardiac function in both groups improved significantly, but the improvement in the control group was greater in the study group (P<0.05) (see Figure 5).

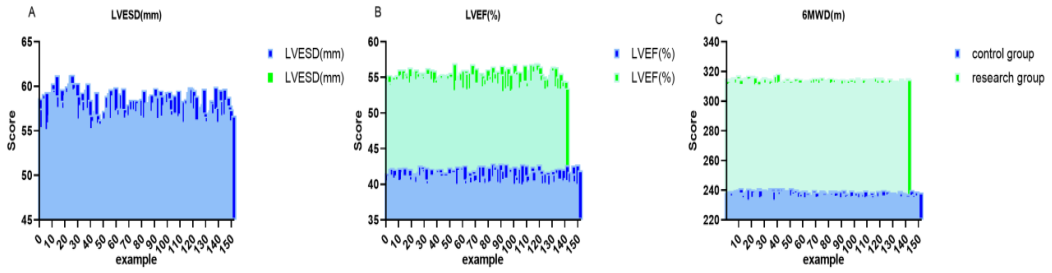

Figure 5 Comparison of cardiac function between the two groups

2.6 Comparison of nursing effects between the two groups

There was no remarkable improvement in quality and care error scores between the two groups before care (P>0.05), and both groups showed

marked progress following care, but the improvement was much greater in the study group compared to the control group (P<0.05). (see Table 1).

Table 1 Comparison of nursing outcomes between the two groups

Group	Number of cases	Nursing satisfaction (points)		Quality of care (points)		Nursing errors (points)	
		Before Care	Aftercare	Before Care	Aftercare	Before Care	Aftercare
Control group	152	59.26±3.23	83.47±4.25	65.32±3.25	85.57±5.14	63.25±3.24	75.29±3.56
Research Group	142	59.25±3.22	92.14±4.33	65.28±3.23	93.89±5.24	63.22±3.27	90.17±3.62
t	/	0.027	17.321	0.106	13.740	0.079	35.523
P	/	0.979	< 0.001	0.916	< 0.001	0.937	< 0.001

3 DISCUSSION

In recent years, the number of fitness players receiving cardiovascular interventions in China has been increasing year by year, and the nursing aspects and clinical treatment have attracted important attention from the academic and medical communities, and the competent health authorities have issued several management orders for vascular interventions. Therefore, vascular intervention and treatment is a relatively long and arduous process, and many patients and families lack a certain understanding of cardiovascular disease and treatment, which can lead to fitness players easily losing confidence in the later treatment if there is no obvious effect in a short period of time. In particular, middle-aged and elderly patients are more likely to have serious negative emotions, while young adults are more likely to have negative emotions due to life and work stress, while they suffer from both physical and psychological effects. Therefore, the treatment of fitness players receiving cardiovascular interventions should be based on close monitoring of the patient's condition and psychological changes, and nursing staff should be able to anticipate and take practical and effective measures to intervene when necessary.

Currently, nursing safety management is a new nursing concept that focuses not only on nursing care, but also on finding possible defects and deficiencies in nursing care based on one's own and others' clinical experience, and using this as a breakthrough to greatly reduce the number of situations in which fitness players lives and health are endangered by nursing defects or negligence. In recent years, nursing safety management has gained popularity among healthcare professionals and patients because of its strict standards in terms of nursing staff's attitude, nursing skills, ability to recognize hazards and emergency response, resulting in a more harmonious relationship between fitness players and nurses. Nursing safety management can fully realize the requirements of patients and families, significantly improve patient satisfaction with nursing safety management and compliance with treatment guidelines, and facilitate rapid recovery. Because of the age, variability and complexity of fitness players undergoing cardiac interventions themselves, and the many

factors associated with their changing conditions, it is the safety management of care that is the combination of behaviors that transcend all types of care, thus ensuring the best possible patient outcomes. The findings of this research show that complication rates, nursing error rate, nursing quality score, The follow-up group had markedly better patient satisfaction than the control group., indicating that the introduction of nursing safety management model based on conventional perioperative care has certain application effects. A strict aseptic management system in the catheterization room can significantly improve patient safety during surgery and greatly reduce unnecessary hospital infections. A robust and comprehensive catheterization laboratory management system allows for effective and informed management of the contents, environment and staff of the catheterization laboratory. It is important to provide standardized and targeted training to nursing staff in a timely manner, which effectively increases the motivation of nursing staff. A tiered management system and flexible scheduling also effectively increases the responsibility and motivation of nursing staff. The nurse in charge should strengthen communication and exchange with the patient, relieve the patient's bad mood in a timely manner, let the patient understand the safety and effectiveness of the treatment, enhance the patient's self-confidence in overcoming the disease and stabilize the vital signs, thus reducing the number of episodes of angina. In addition, the nurse in charge should monitor the duration, nature and characteristics of the patient's postoperative pain and provide timely management of the pain aspect to reduce patient pain and improve patient comfort. In conclusion, the use of holistic care in the cardiac monitoring of patients with acute myocardial infarction can improve the prognosis of patients and reduce the incidence of arrhythmias.

Overall, clinical nurse safety managers can provide safe, efficient and correct work during cardiac surgery to ensure the success of the procedure. Under the pressure of today's increasingly tense doctor-patient relationship, many fitness players and their families hold disrespectful or suspicious attitudes toward health care professionals. If health care professionals are not able to provide good care at this time, it can badly impact the trust of health care professionals by fitness players and their families. Therefore, the implementation of nursing safety management can effectively improve the responsibility of health care professionals in treating fitness players and successfully completing the clinical care process, which can effectively promote the doctor-patient relationship and reduce unnecessary medical disputes.

4 CONCLUSION

Nursing safety management assumes a key role in the perioperative consideration of fitness players undergoing cardiac mediation, increasing the work on mental status, better personal satisfaction, and a good prognosis of

the management. Along this line of research, techniques of nursing safety management deserve to be advanced and applied.

REFERENCES

Aresti, N., Malik, A., Ihsan, K., Aftab, S., & Khan, W. (2014). Perioperative management of cardiac disease. *Journal of Perioperative Practice, 24*(1-2), 9-14.

Atwood, D., & Wadlund, D. L. (2015). ECG interpretation using the CRISP method: a guide for nurses. *AORN journal, 102*(4), 396-408.

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. *Journal of Public Health Research, 11*(2), jphr. 2021.2742.

Benesch, C., Glance, L. G., Derdeyn, C. P., Fleisher, L. A., Holloway, R. G., Messé, S. R., . . . Welch, B. G. (2021). Perioperative neurological evaluation and management to lower the risk of acute stroke in patients undergoing noncardiac, nonneurological surgery: a scientific statement from the American Heart Association/American Stroke Association. *Circulation, 143*(19), e923-e946.

Brody, S., Grover, H., Lindquist, E., & Vedlitz, A. (2010). Examining climate change mitigation and adaptation behaviours among public sector organisations in the USA. *Local Environment, 15*(6), 591-603.

Chen, B., You, X., Lin, Y., Dong, D., Xie, X., Zheng, X., . . . Lin, W. (2020). A systematic review and meta-analysis of the effects of early mobilization therapy in patients after cardiac surgery: a protocol for systematic review. *Medicine, 99*(4).

Colla, C. R., Carvalho, D., & Remor, A. P. (2019). The influence of different types of fasting on lipid profile of volunteers from a city of Rio Grande do Sul, Brazil. *Jornal Brasileiro de Patologia e Medicina Laboratorial, 55*, 360-377. doi:10.5935/1676-2444.20190033

Eberhardt, T. D., de Lima, S. B. S., de Avila Soares, R. S., Silveira, L. B. T. D., Rossarola Pozzebon, B., Reis, C. R., . . . Alves, P. J. P. (2021). Prevention of pressure injury in the operating room: Heels operating room pressure injury trial. *International Wound Journal, 18*(3), 359-366.

Engorn, B. M., Kahntroff, S. L., Frank, K. M., Singh, S., Harvey, H. A., Barkulis, C. T., . . . Greenberg, R. S. (2017). Perioperative hypothermia in neonatal intensive care unit patients: effectiveness of a thermoregulation intervention and associated risk factors. *Pediatric Anesthesia, 27*(2), 196-204.

Gomes do Carmo, T., Ferreira Santana, R., de Oliveira Lopes, M. V., Mendes Nunes, M., Maciel Diniz, C., Rabelo-Silva, E. R., & Dantas Cavalcanti, A. C. (2021). Prognostic indicators of delayed surgical recovery in patients undergoing cardiac surgery. *Journal of Nursing Scholarship, 53*(4), 428-438.

Khanna, A. K., Bergese, S. D., Jungquist, C. R., Morimatsu, H., Uezono, S.,

Lee, S., . . . Tornero, C. (2020). Prediction of opioid-induced respiratory depression on inpatient wards using continuous capnography and oximetry: an international prospective, observational trial. *Anesthesia and analgesia, 131*(4), 1012.

Lacey, J., Corbett, J., Forni, L., Hooper, L., Hughes, F., Minto, G., . . . Woodcock, T. (2019). A multidisciplinary consensus on dehydration: definitions, diagnostic methods and clinical implications. *Annals of medicine, 51*(3-4), 232-251.

Liu, J., Zhong, Z., Ou, S., & Peng, K. (2021). Application effect of evidence-based nursing in perioperative period of acute coronary syndrome. *American Journal of Translational Research, 13*(4), 2653.

Lowe, M. J., & Lightfoot, N. J. (2020). The prognostic implication of perioperative cardiac enzyme elevation in patients with fractured neck of femur: A systematic review and meta-analysis. *Injury, 51*(2), 164-173.

Mehta, N. M., Skillman, H. E., Irving, S. Y., Coss-Bu, J. A., Vermilyea, S., Farrington, E. A., . . . Braunschweig, C. (2017). Guidelines for the provision and assessment of nutrition support therapy in the pediatric critically ill patient: Society of Critical Care Medicine and American Society for Parenteral and Enteral Nutrition. *Journal of Parenteral and Enteral Nutrition, 41*(5), 706-742.

Okolie, C., Rodriguez, R., Wale, A., Hookway, A., Shaw, H., Cooper, A., . . . Greenwell, J. (2022). A rapid review of the effectiveness of innovations to support patients on elective surgical waiting lists. *medRxiv*, 2022.2006. 2010.22276151.

Smith, Z. (2020). Perioperative nurses' experiences of caring for donation after cardiac death organ donors and their family within the operating room. *Journal of Perioperative Practice, 30*(3), 69-78.

Theologou, S., Giakoumidakis, K., & Charitos, C. (2018). Perioperative predictors of delirium and incidence factors in adult patients post cardiac surgery. *Pragmatic and observational research*, 11-19.

Todd, L. A., & Vigersky, R. A. (2021). Evaluating perioperative glycemic control of non-cardiac surgical patients with diabetes. *Military medicine, 186*(9-10), e867-e872.

Weibel, S., Rücker, G., Eberhart, L. H., Pace, N. L., Hartl, H. M., Jordan, O. L., . . . Raj, D. (2020). Drugs for preventing postoperative nausea and vomiting in adults after general anaesthesia: a network meta-analysis. *Cochrane Database of Systematic Reviews*(10).

Zhao, L., Wang, L., Liu, Y.-l., Yang, H.-q., Wei, X., Yang, X., Lin, S. (2021). A Retrospective Study of Perioperative Nursing Care of Patients After Percutaneous Left Atrial Appendage Occlusion. *Journal of PeriAnesthesia Nursing, 36*(6), 638-641.