**Impact of patient-centred education**

**versus standard education on adult anxiety levels**

**in the perioperative period:**

**A critical literature review using systematic methods**

*Major project towards the award of Master of Science*

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## List of Abbreviations/Terms

PCA Patient-centered approach

PCC Patient centered care

IC Individualized care

SR Systematic Review

HADS Hospital Anxiety and Depression Scale

STAI State Trait Anxiety Inventory

VAS Visual analogue scale

APAIS Amsterdam Preoperative Anxiety Information Scale

SDM Shared decision making

GA General Anaesthesia

SA Spinal Anaesthesia

RCT Randomised Control Trail

General Anaesthetic A loss of sensation or consciousness induced by intravenous drugs or inhaled gases

Spinal Anaesthesia or An injection into the subarachnoid space near the spinal cord

Spinal Block

Major surgery An invasive procedure requiring extensive resection of the body requiring a GA

Intermediate surgery A minimal invasive procedure requiring a small open incision or laparoscopically or arthroscopically requiring SA or GA

Heterogeneity Refers to SR differences of variables in the study

ABSTRACT

**AIM**

To investigate the impact of patient-centred education (PCE) on anxiety level in adult elective surgical patients during the perioperative periods.

**BACKGROUND**

Preoperative anxiety is known to have a major impact on the patients’ quality of life and outcome. Anxious patients have a high incidence of mortality and morbidity. Anxious patients often have higher blood pressure, heart rate and release cortisol, a corticosteroid hormone that can impede wound healing and prolong hospital discharge. Whilst, patient education is shown to be beneficial in reducing anxiety during the perioperative periods; effective strategy remains debatable. Too much or too little information can lead to anxiety. Recent research and government strategy has shown linked benefit of patient-centered approach to empowerment, shared-decision making (SDM) and better quality of life, leading to better outcome. Gaps in research suggest more research is needed to show linked benefits of promoting quality perioperative PCE on outcomes.

**METHODS**

A systematic literature search of EMBASE, CINAHL and MEDLINE databases was undertaken using relevant keywords. Studies dating from 2011 – 2021. Participants were adult in English language, focusing on patient-centred education. With comparisons of PCE versus standard education, with anxiety as a primary outcome prior to surgery. Eight studies were identified, evaluated and critically analysed.

**RESULTS**

In total 1646 participants in this SR. Preoperative education incorporating Patient centred care (PCC) and multimedia information are deemed effective strategies in reducing anxiety to promote quality outcome with 95% Confidence Interval (CI). There is limited research linking the benefits of PCE to reduce anxiety during the perioperative phase.

**CONCLUSION**

The most effective approach toPE remains inconclusive. However, evidence suggests incorporating a patient Centred Approach (PCA) in a combined standard education with multimedia information is a more effective strategy in reducing anxiety to promote quality outcomes.

Recommendation is more research is required, focusing on PCE, along with the benefit of the advance or specialist practitioner’s as educators in reducing perioperative anxiety to improve quality outcome.

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## CHAPTER 1

### INTRODUCTION

Whilst the original plan was to undertake primary research, this was terminated due to the global COVID-19 pandemic of 2020, therefore this research is a systematic review (SR) of the impact of patient centred education versus standard education on anxiety levels in adults during the perioperative period.

The seminal and present studies done by (Hayward 1975 and Boore 1978;Stamenkovic et al., 2018) provides clear evidence that increased anxiety before surgery can have a debilitating effect on patients’ quality of life and outcome. Too much or too little information can lead to anxiety. Many studies have been conducted and show that preoperative education is beneficial however a systematic review for the best strategy to deliver pre-op education is inconclusive (McDonald et al., 2014). The author noted that in previous studies, PCE, its impact on anxiety and the educator’s ‘expert’ knowledge are essential variables, often not addressed and standardized.

This review will focus on recent development in this area (within the last ten years, 2011-2021), with the scope of practice for PCE being within the context of adult preoperative education. This will include a review of the historical and theoretical perspectives of patient centred care and the benefits and barriers to patient-centred education during the perioperative periods.

A literature search will be explained and chosen literature identified will be critically appraised, including methodology choice, study limitations with themes highlighted along with implication and application to practice of results. Concluding with a reflective analysis of the findings.

* 1. DEFINITIONS AND SCOPE

For this paper, Patient-centred care or approach (PCC), patient-centred education (PCE) and individual care (IC) are all interchangeable context for the purpose of this paper.

Patient-centred care or approach can be defined as compassionate, empathetic care that incorporates the needs, values and expressed preferences of each individual patient (Wolfe, 2001).

Thus patient-centered education is communication that invites the patient to participate and enables informed decision-making in their care (NMC, 2018); (Royal College of Nursing, 2018) ; (Health Education England, 2017a). Whilst there is no agreed clarity for its definition (Health Education England, 2017a) it is theorised to linked quality outcome in the 21st century. Thus, treating the patient as a whole while attending to their individual needs.

Standard education can be defined as health related information that aim to provide patients with psycho-social support, improve knowledge, health behaviours and better outcomes prior to surgery (Edwards, Mears and Lowry Barnes, 2017).

Anxiety as it relates to perioperative surgery will be defined as a vague feeling of uneasiness, apprehension or severe emotion that is directly related to fear of the unknown or unfamiliar situation (Schwarzer, 2013). An adult is classified as an individual over the age of 18 years (Cambridge Dictionary, 2020b).

Elective applies to non-urgent or planned surgery. The duration of the patients’ surgical path way is referred to as the ‘perioperative period’. According to Myles et al. (2018) perioperative can be define as time before surgery (preoperative), during surgery (intraoperative) and after surgery (postoperative) with the aim to provide better optimisation for the patient throughout this period.

## CHAPTER 2

### 2.0BACKGROUND

Preoperative education is known to be beneficial in reducing anxiety. Whilst, the strategy remains inconclusive; the general consensus is that patient education regardless of the mode is noted to be of benefit in reducing anxiety prior to surgery (Rucinski and Cook, 2020;Bayrak,Sagiroglu and Copuroglu,2019;Itisha et al., 2017).

Seminal and present studies completed by Hayward and Armiger, 1976;Walker, 2007; Wongkietkachorn and Rhunsiri,2018) provides clear evidence that amplified anxiety during the perioperative period can have serious implications on surgical patients (Williams et al., 2013; Alanazi, 2014). For example, in cancer surgery approx. 1 in 4 patients experience heightened anxiety before surgery which is associated with poor quality outcomes (Ferlay et al., 2018).

Frequently patients are consented just before going to theatre and at this point they are reminded about possible complications. This in no doubt can lead to increased fear, stress and anxiety.

According to Alanazi (2014) anxious patients are linked to increase postoperative pain, arrhythmias, elevated blood pressure and heart rate. Also the release of higher corticosteroid levels which not only impedes wound healing but also leads to increased length of stay (LOS) administration of a higher dosage of drugs during induction (Wilson et al., 2016;Christian et al., 2007;Razjouyan et al., 2017). Wound healing is vital for surgical pathway, as this forms part of the discharge criteria (Walburn et al., 2009;Gouin and Kiecolt-Glaser, 2012;Chang et al., 2019).

Recognition has been gained for patient-centred care (PCC) in the 21st century and has led to the linked benefit of quality outcome (Ahmad et al., 2014). In the UK the proven benefits of PCC are central to the strategic values and drive from the government for patient-centred approach across all healthcare organisation (NHS Improvement, 2019). this is resulting in better quality outcome for patients during admission and after discharge (Song et al., 2020). As such research into the benefits of patient-centred approach are steadily increasing (Meterko et al., 2010). Regardless of the benefits, practices have not changed due to time constraint (Rathert et al., 2015)

The NHS Long Term Plan (LTP) (2019) aim is to reduce LOS and promote quality outcomes for the patient. Additionally, the (NMC, 2018) emphasise individualised care. Mirrored by Stamenkovic et al.( 2018) that states that assessment of patients’ needs for education during pre-op assessment need to be individualized prior to any teaching interventions. A patient centred approach (PCA) to education helps to empower the patient, helping them to reduce their anxiety levels (Department of Health and Social Care, 2019). Therefore, a patient centred approach is essential if individual patient needs are to be considered. However, limited research is available regarding the impact of patient-centred education in reducing perioperative anxiety as well as the importance of the practitioners’ knowledge.

### 2.1 HISTORICAL PERSPECTIVES

Traditionally perioperative surgical outcome was based on the survival of the patient prior to surgery and later updated to include no complications 30 days postoperatively (Damhuis et al., 2012). Thus, traditionally Healy et al. (2016) opine that both the healthcare giver and patients have their own standards and measures of what successive surgery outcome should be. Formerly the concept of PCC was noted as the patient being recognised as a “distinctive individual” (Balint, 1969). However, it was during 1990’s an international accreditation standards first published by JACHO; made patients education in all setting becomes a priority (Joint Commission on Accreditation of Healthcare Organizations (JCAHO) (1997). Patient education was seen as central to quality outcome and also endorse the concept of patient-centred approach (JCAHO, 1997).

In the united kingdom (UK) the PC concept has been mention in many professional bodies (NMC, 2018;Royal College of Nursing, 2018); whilst its core values are often not fully practice. By the 20th century there were increased publicity of PCC due to being linked to overall improve patient satisfaction, adherence and quality of care. Thus, in the 21st century policy makers has shown more recognition to PCC as being a key aspect to high quality care.

Similarly, preoperative anxiety was first observed in 1904 by Henry K Beecher (a war-doctor) to have an adverse effect on postoperative recovery(Egbert, 1963). Later followed up with an survey (Ryan, 1975). Anxiety may impact unfavourably on the perioperative period, decreasing patient satisfaction, impacting on anaesthetic induction and patients’ recovery (Britteon, Cullum and Sutton, 2017). Additionally, the longevity of the population give rise to an upsurge of surgery worldwide (Hellstadius et al.,2017;Ruis et al.,2017). Thus, the need for evidenced-based interventions in tackling anxiety becomes paramount.

Hence, the continue increase in healthcare needs, demand for cost effective care ,health care demands outweighs service demand and the facilitation of earlier discharges. Health care system are now shifting away from standardised care towards patient-centred approach in order to improve patients’ quality outcome (Porter, 2010;Kapur, 2020).

### 2.2 THEORETICAL PERSPECTIVES

The goal of patient education (PE) is to prevent disease and promote health (Coppola et al., 2016). (Hoerger et al., 2013) also added, individual patient has different level of anxiety and learning needs varies. Learning is often linked to theories that explain human behavior such as health belief model, self-efficacy adult learning theory etc.(Syx, 2008). whilst, the word patient-centered are not directly used, all the concept referring to the patient as “individual” are directly and indirectly linked patient compliance to patient-centered approach(Syx, 2008).

Additionally, PCC is endorsed by the government Long Term Plan (NHS Improvement, 2019) and patient centered care frameworks (Health Education England, 2020; Royal College of Nursing, 2018). PCC not only assist individual needs of the patient preoperatively; as a result patients’ anxiety reduces, readmission rates decreases, reduction of complications and patients knowledge of about their care increases leading to empowerment and increase in quality of life (Kalogianni et al., 2016). Thus, a shift from traditional disease focus with an understanding that not one standardized care fits all (Epstein and Street, 2011;NHS Improvement, 2019;Cheater, 2019).

### 2.3 BENEFITS OF PATIENT-CENTRED CARE TO PRACTICE

In todays multifaceted healthcare system with limited resources, the forefront of current practice are based on quality-focused, cost-effective and patient-centred care (Hoerger et al., 2013;McGinnis et al., 2019;Kapur, 2020). Research has shown that patient-centred care is very much allied to the patient perception; which not only can results in better physical and emotional recovery, less diagnostic testing and reduce length of stay (LOS) but also greater patient satisfaction (Stewart et al.,2000;Meterko et al., 2010;Poitras et al., 2018). Patient-centred associate individualise care at the time the patient wishes. Similarly, the NMC code of practice emphasises patient-centred care in its concept of prioritising people, respect of individual choice and dignity (NMC, 2018). Emphasise, a duty of care for all healthcare personnel to reflect on their practice; ensuring practice is evidence-based in delivering the right care to the patients. Mirrored by Coppola et al. (2016) patient-centred care encouraged empowerment. Empowered patient takes an active role in their care which aids in quality outcome (England, 2020).

Fix et al. (2018) argued that each individual is unique and has “individual psychological history” and coping behaviours which could impact postoperative recovery. Preoperative anxiety may be due to fear of the unknown, changes to body image, and feeling of vulnerability and possibility of dying (Kindler et al., 2000).

Additionally, Weiser et al.(2016) suggest an increased in technology and population longevity sees worldwide more than 312.9 million operation yearly. Thus, increasing the risk for major complications resulting in poorer quality outcome (The Royal College of Surgeons of England and DOH, 2011). In spite of that, (Oresanya, Lyons and Finlayson, 2014) concur PCC has benefited practice by supporting surgical risk stratification; this aid individualised care, and frail patients who would have otherwise considered unfit for an operation can now being considered for surgery.

Research whilst limited, has supported the benefit of individualised preoperative education. Similarly, it is envisaged that nurses are best posed in delivering PCE. (McDonald et al., 2014) supports this and suggest, particularly around surgery, anaesthesia and the postoperative period in endorsing quality outcome for both the patient and the health care organization Likewise, Hill (2017) concur PCE requires expert knowledge; this puts the onus on the nurse or practitioner to ensure knowledge and practice is up-to-date. As without expert knowledge of the procedures and effective communication, how could one truly provide individualised care? You et al. ( 2013) supports this adding that higher level of education results in lower mortality rate, better patient outcome, and higher patient satisfaction.

With that said, PCC is proven to be of many benefits world-wide to the healthcare system. Moreover, it also fosters shared-decision process of care and decreased unflavoured postoperative sequelae (Grocott et al., 2007). Also, fosters high quality compassionate leaders, needed to sustain the NHS (NHSI, 2019).

In light of that one could agree, that preoperative anxiety, a complex condition, is potentially a avoidable risk factor for postoperative complications (Pinto et al., 2012). Hence, one of the government and other regulating bodies drive in promoting PCC that matter to the patients (Department of Health and Social Care, 2019).

### 2.4 BARRIERS TO PRACTICE

PCA is growing in eminence as proven to be valuable to healthcare practice (McMillan et al., 2013). whilst patient-centred concept have been mention in many professional bodies (NMC, 2018;Royal College of Nursing, 2018); its core meaning is often not fully practiced. Evidenced by research is that the lack of full PCC implementation was due to various barriers (Vest et al., 2010;. (Scholl et al., 2014). One barrier is due to management and policy maker lack of understanding of what PCC entails (Scholl et al., 2014). Mirrored by Pelzang (2010) who added an absence of clear meaning and process of measurements may also act as hindrance.

Similarly, Ladha and Wijeysundera (2019) concur whilst inadequate measurement have an impact on patient-centred outcome it is not enough to change service delivery. Likewise, Ladha and Wijeysundera (2019) suggest another potential barrier to PCC is when the healthcare provider fails to factor the patient, value, wishes and preference in order to foster SDM in the surgical outcome. However, one could also argue this situation can be two-fold such as language barrier and lack of health literacy of patient (Resources for Patient Education: Introduction, 2021). Supported, by Ha, Kim and Lee (2017), patient’s literacy, educational level, and language has an impact on PCC. According to McQueenie et al. (2019) not taking this important aspect of care can contribute to the patient missed consultations, noncompliance, impairment and even mortality.

Thus, arguably, ineffective communication, lacking SDM when communicating potential surgical risk to patients, equally serve as a barrier to PCC. Conversely, Laine and Davidoff (1996); Rathert et al.(2015) all noted time constraints and often staff shortage serves as a barrier to utilisation of PCC full potential in practice. Pham et al. (2020) supports this added the practical challenges of a busy clinical environment, with the added pressure of government targets can also cause a barrier to PC.

Despite lacking a universal definition, coupled with these barriers, it is clear the process, and understanding of PCC is slowly being embedded in the healthcare system. Even so, Ladha and Wijeysundera (2019) argue that more research is needed specific areas of ‘risk predictions’ in the patient’s surgical journey. In the same way, one could argue universal definition of PCC, would be still pointless without active implementation and legislation.

Whilst, research seems to highlight the nurses’ role of being crucial in implementing PCC (Fix et al., 2018); arguably, “PCC” if viewed as a treatment intervention, what better coordination of care, than that of a multidisciplinary approach (Rolfe, 2014;Health Education England, 2020). Likewise, (Granziera et al., 2013) support this and iterate a drive from organisation level is needed to effectively rollout PCC at departmental level. Additionally, to utilise PCC TO its full potential, patient engagement to share their experience is essential (NHS Improvement, 2019).

### 2.5 GLOBAL, NATIONAL POLICIES AND GUIDELINES

In modern health care PCC model has becomes prominent in shaping policies to improve, regulate, and legislate health globally (Epstein et al., 2010;Scholl et al., 2014b) . In United States (US) the significance of PCC lead to the institute of medicine implementation PCC as one of six aims for improvement of health(Institute for Health-care Improvement, 2005). In 2010 PCC was enforced by the patient protection and affordable care act; further lead to a dedicated funded research facility for PCC outcome(Scholl et al., 2014).

In the United Kingdom (UK) a rapidly changing NHS where services and resources are outweighed by the demand, financial constraints and longevity of the population, promotes PCC in an effort to bring changes in how we deliver sustainable care and quality outcomes (Salisbury et al., 2018).

Hence, in 2007, the UK recognition of PCC as a predictor for quality outcome sees a drive from policy papers such as the King’s fund on shared decision-making in surgery (de Mik et al., 2018); the department of health (DOH) in partnership with the public, patient experience and engagement; the ‘‘Liberating the NHS: No decision about me, without me’.’ (Putting patients at the heart of care | The Health Foundation, 2009;Mulley, Trimble and Elwyn, 2012). de Mik et al. (2018) argue a bid to assist the cultural shift from clinicians and organisation focused care to care that is patient driven, fosters open communication and a more power sharing culture.

Thus, the implementation of PCC has swayed healthcare organisations to look at an individual quality of life instead of postoperative survival rate; focusing on preventative measure rather than that of curative chronic conditions (Rathert et al., 2015; Cooper et al., 2013). Supported, by Scholl et al., 2014b) who added PCC is care that is recognised and respected by the clinician of the individual patients’ perception and understanding of what is happening to them. Presently, whilst no specific anaesthetic perioperative policy or guideline on anxiety. PCC will continue to influence perioperative practice towards safe, efficient, cost-effective individual approach way of working in achieving quality outcome (McGinnis et al., 2019;Kapur, 2020).

### 2.6 ETHICAL CONSIDERATIONS IN PERIOPRRATIVE PRACTICE

**Full ethical approval for this paper was gained via the university ethics committee**

The study was classified as a SR. No intervention was conducted on patients nor patient contact made during this study. The required research ethics training was completed.

With that said, Kelvered, Öhlén and Gustafsson (2012) concur, ethics as it relates to Perioperative practice compared to other setting is diverse and complex. Similarly, Spruce (2013) added, required multidisciplinary, coordinated approach, to include prior consultation of patient wishes and preference to deliver safe quality care. Additionally, Allen ( 2017) concur surgical patients are usually considered as vulnerable due to obligatory participation in the surgical procedure.

The UK health departments and the health research authority (HRA) (2017) developed frameworks by which research authority and ethical values could be evaluated against good practice and legal requirements. Thus, ensuring safety and ethical consideration by means of assessment in protecting the patients or service users. As of such Melia (2017) argued ethical consideration and approval is vital essential aspect for conducting and completion of reputable research.

Blomberg, Bisholt and Lindwall (2018) concurred practitioners have a professional duty, to comprehend the impact of ethical regulations alongside the recommended and approved ethics that regulate practice. The UK and international code of ethics for nurses both stipulate that each practitioner has an ethical and moral responsibility to advocate for the patient, show self-effacement, respect, protect patient autonomy and safe-guard dignity (NMC, 2018;international council for nurses (ICN), (2013). Since the introduction of Beauchamp and Childress four principles in 1989, which has been the dominant approach for both clinical and research ethics in healthcare (Beauchamp and Childress, 2013). Garcia (2020) note that the four principles such as respect for autonomy, justice, beneficence and non-maleficence are applicable to perioperative practice.

*Autonomy* – the right for patients to make their own informed decisions in accordance with their own values and beliefs. In respecting autonomy the surgical or medial professional have the onus to give clear, realistic and truthful information about all aspect of their care in order for the patient to give informed consent. This Bossaert et al. (2015) argue also incorporates PCC in acceptance of the competent individual patient decision regardless of their choice of treatment. Although the principle may be applicable to both elective and emergency surgery; contrary in an emergency situation a patient metal capacity may be diminished. Thus, one could argue may be more applicable to an elective surgical pathway. Similarly, supported by Blomberg, Bisholt and Lindwall (2018) who takes the view ethics means that by understanding and acceptance of a patient perspective so too does one become accountable and dedicated to the patient in a vulnerable situation.

Beneficence- The principle of clinicians’ acting in the best interest of the individual or patients; with a benefits versus outweighed risk ratio in mind. The aim of surgical intervention is to promote quality of life (Moll et al., 2021). Desserud, Veen and Søreide, (2016) concur an individual risk versus benefit PCC becomes essential aspect of care. Thus an ethical responsibility to act for the benefits of others. Shah et al. (2015) argue in an emergency situation ethical dilemma is high due to repeated poorer outcome of morbidity and mortality especially in the elderly.

Essentially, decision of ‘best interest’ lies with the medical or surgical professionals (Donnelly, 2009). However, arguably acceptable that in an emergency situation whether, surgical or medical input, that healthcare providers have a duty of care to act in the best interest of the individual. Furthermore, (Donnelly, 2009) concur, patients in vulnerable situation or decrease mental capacity with no prior available records of the patient wishes or preference, then clinicians should be acting in the best interest; while adopting an implied consent in the process (Consent in Adults, Adolescents and Children in Emergency Departments, 2021).

Non-maleficence – The principle as identified in the ‘Hippocratic Oath’ that most of all, “do no harm“. However, widely accepted that surgery is a risk factor for complications (Stoneham, Murray and Foss, 2014). Thus arguably, contradictory as complicated surgery can lead to harm of the patients whether in quality of life or even death (Cauley et al., 2015;McCoy et al., 2015). However, it is the concept of the intention to help and not to harm. Thus with PCC approach at the forefront it is necessary for clinicians to give realistic goal and outcome not just to the patient but to the family members. Abbas et al. (2010) added, PCA care along with measures such as minimal handling of tissue, shorter operations and optimal surgical practice can provide assurance of quality outcome for the surgical patients.

Justice – A notion that highlights fairness and equality amongst individuals. Again fosters PCC; as all patients are entitled to moral quality care regardless of their gender race or age (England, 2021). Whilst, it is not common practice except in exceptional circumstances family members are not allowed to watch the surgical procedure Sadeghi, Nayeri and Abbaszadeh, 2015). However, one could conclude, this code implied open communication and freedom to speak between healthcare providers, patients and family (Siewert and Hochman, 2015). Kangasniemi et al. (2013) concur from an ethical stand point trustworthiness of healthcare providers becomes essential for effective strategy for risk in providing PCC. With that said, justice in ethics calls for honesty in stating whether a complication was due to human error or not, the patient has a right to know.

### 2.7 GAPS IN KNOWLEDGE

Evidence suggest that PCC are widely used. Whilst organisation support is crucial , Castro et al. (2016) suggest that equally important is that healthcare providers reflect on their own practice in association to the key components of PCC, see appendix-1.

The literature suggest several conceptual framework, and the concept of PCC are understood, however, lack of utilising PCC to its full potential are often due to hindrances by barriers to implementation. In contrast, Santana et al. (2018) argue gaps in knowledge are due to practical guidance of how to effectively execute PCC. Elwyn et al. (2013) supports this and added for PCC to become reality, barriers from both micro and macro level will need to be addressed, along with continued PCC evaluation to foster implementation in practice. In addition, to those gaps there are limited research on PCC on preoperative education in the perioperative environment in reducing anxiety.

This gap in knowledge also forms the rationale for undertaken this literature review.

## CHAPTER 3

### 3.0 METHODOLOGY

Research methodology obtains evidence and knowledge informed by theories then develops into a rigorous form of inquiry, based on one's reality of truth and one's approach to knowing (Jacobsen, 2017)**.**  Thus, evidence-based practice (EBP) in healthcare reinforces guidelines, policies and protocols to facilitate safety and improve patient outcomes(NMC, 2018). Ginex (2017) concurs that research and EBP are essential to high-quality care, including patient preference, clinical expertise, and the best research evidence.

Moule (2020) concur that quantitative research seeks to find the cause of phenomena objectively, with an etic epistemological belief that "one truth exists", data should be discovered and analysed. Similarly, (Polit and Beck, 2018) concur with the rationale EBP, often used in quantitative approaches to assess evidence in practice.

 Conversely, (McGregor, 2020) argues that situations or realities are explored subjectively based on the researcher's philosophies or concepts in the qualitative approach. Thus, relativist's base their views on the emic epistemological beliefs that no "one truth" exists, as realities can be multiple, depending on the meaning attached, one's experience cannot be generalised (Walls, 2015). QR explores the why and how of decision making, is non-numerical, applies to reason and uses words (Walls, 2015).

However, an SR is one way of facilitating the best evidence that answers specific clinical questions by providing an informed decision by reasoning (Eriksen and Frandsen, 2018). Nurses have a professional obligation to keep practice up-to-date with the best available evidence to support individualised care (NMC, 2018). Pati and Lorusso (2018) concur systematic reviews and meta-analyses offers the practitioner the opportunity to assess current knowledge gaps in research evaluate the strength of recommendation to guide the decision-making process in practice.

(Moher et al., 2014) suggest, The Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) guidelines relating to Systematic Reviews which would be used to assess the methodology for this critical literature review

### 3.1 RESEARCH QUESTION

The research question for this critical literature review seeks to evaluate the phenomenon of 'The impact of PCE on anxiety level in adult elective surgery.

In practice, it is accepted that in obtaining evidence, no one approach can be applied to see the world view in all its "lenses". Thus, one could agree that the core of one's drive to a particular methodology is influenced by one's belief of what truth is (ontology) and whether one sees the world objectively or subjectively (etic or emic approach) (Yilmaz, 2013).

Similarly, Clarke and Collier (2015) added that a literature review (LR) is central to exploring the subject in question in determining the relevance in research. However, whilst a literature review concentrate on a single question, it implies a critical evaluation from the data of the selected papers (Pati and Lorusso, 2018). Similarly, (Ilott et al., 2010) argued that the best source for the literature review is from peer-reviewed journals books.

Pati and Lorusso (2018) noted that academic journals usually have more advanced intellectual quality than professional journals. Paez (2017) suggests that grey literature such as thesis, policy documents, conference material, abstracts, dissertations, and reports are useful unpublished data via non-traditional sources. Also, utilising SR may decrease publication bias. In contrast, Pati and Lorusso (2018) concur grey literature is low quality with unclear quality control measures.

Similarly, Forbes 2016) added that SR incorporates re-analysing data from available literature to assess specific inclusion and exclusion criteria. Additionally, Harris (2013) concur that whilst LR and meta-analysis (MA) are conversely used, SR uses high-quality primary research based on selected criteria to address the research question. In contrast, MA deploys the statistical method of a quantitative approach to appraise pooled data from single studies (Forbes 2016) .

3. 2 AIMS AND OBJECTIVES

Research aims while often driven by an individual interest or beliefs, the fundamental basis is to make transformative change while expanding knowledge in the nursing profession (Williamson and Whittaker (2020). This LR aims to advance knowledge concepts, identify challenges, and understand the benefits of PCC on adults’ anxiety in the field of perioperative practice by identifying the implication to the healthcare system, patients, and family. The aims of this review are to:

1. Identify, examine and analyse quantitative research concerning the impact of adult PCE on anxiety within the perioperative setting, also studies highlighting PCC standpoints.

2. Assess the quality of searched studies.

3. Critically appraise and synthesise findings within the context of existing knowledge within the topic area.

4. Examine the implications of the findings, incorporating recommendations for practice and future research.

Many adopted tools for relevant search terms (Cooke, Smith and Booth, 2012;Aveyard Helen, Payne Sheila and Preston Nancy, 2016). Aveyard Helen, Payne Sheila and Preston Nancy (2016) suggest there is no superiority to the tools. Thus, selecting the most appropriate search strategy may be based on the type of studies (qualitative or quantitative) or preference. However, Forbes, (2016) proposes using the acronym (PICO) participants, intervention, comparison, and outcome criteria when addressing original and focus questions due to its careful approach in establishing the inclusion and exclusion criteria for SR.

Cronin (2013) added that PICO allows transparency with paper selections; selecting databases when answering a specific research question. Similarly, (De Brun, 2013) concur that Cochrane Collaboration has approved PICO as an ideal model to control the research process. Thus, due to simplicity and clarity, the PICO was adopted and utilised to aid the appropriate inclusion and exclusion criteria for this critical literature review; see table 1 outlines of criteria.

**Table 1** – PICO criteria

|  |  |  |  |
| --- | --- | --- | --- |
| **Population** | **Intervention** | **Comparison** | **Outcome** |
| * Adult patients * Perioperative | * Patient-centred education * Information | * Standard education | * Reduced anxiety * Improved outcome |

As per section 3.1, a quantitative approach suits the proposed research question (Clarke and Collier 2015). Therefore, in order to obtain relevant research regarding PCE, the healthcare databases advanced search (HDAS); using Embase, Medline (medical databases) and CINAHL (nursing and allied healthcare information). The search terms applied were preoperative or perioperative surgery, patient education, and patient anxiety. See table two inclusion and exclusion criteria. Also, the summary of search terms applied and explained, see appendix-2.

***Table 2*** *– Inclusion and exclusion criteria*

|  |  |
| --- | --- |
| **Inclusion criteria** | **Exclusion criteria** |
| Dated < 10years old | Dated > 10 years old |
| Perioperative setting only | Non-English Papers |
| Anxiety as outcome | Anxiety as not an outcome |
| National & International papers | Secondary studies |
| Patients over 18 years old (Adult only) undergoing surgery | Primary care setting |
| Full text articles | Paediatrics studies |
| Quantitative studies | Qualitative studies |

## 3.3 – OUTCOME OF SEARCH

Due to time constraints, a formulated adopted approach was utilised to search EMBASE, CINAHL and MIDLINE databases. Atkinson and Cipriani (2018) concur that identifying and scrutinising many studies can be demanding without an effective search strategy, and the search offers a copious amount of information.

In searching the database, a limit of the English language was very helpful, which yielded 181 results. A further limit to adult-only resulted in 111 studies. Sixty-three studies were identified, of which12 were duplicates. Screening of the 51 remaining studies found that 37 did not meet the inclusion criteria. Further analysis of the remaining 14 studies was further screened, and four were found unacceptable, which reduced the total number to 8 papers. Eight suitable studies were selected and appraised, as shown on the PRISMA flow diagram, figure 1.

All 8 studies were RCT’s. See characteristic of the study appendix-4. All adopt a quantitative stance focusing on all types of elective surgery (major to intermediate) c). The studies were all international, Germany (n=1), Italy (n=1), Greece (n=1), South Korea (n=1), Hong Kong (n=1), China (n=1), India (n=1), and Thailand (n=1). Booth (2016) concur that 8 studies are good for an SR.



## 3.4 – ASSESSMENT OF METHODOLGICAL QUALITY

The CASP (Critical Appraisal Skills Programme) tool was adopted to appraise the papers identified, see appendix-3 critically. Methodology towards quantitative analysis is well developed compared to qualitative studies. However, Caldwell, Henshaw and Taylor (2011) opine the accessibility of various critical appraisal tools to assist the researcher in identifying the risk of bias. Similarly, Parahoo (2014) concur with the possibilities of methodological bias. The studies qualities were ranked good quality, and some intervention was not always possible to blind the patient and or clinician; therefore, no study was considered poor quality.

However, Higgins and Altman ( 2008) suggest blinding a notable methodological limitation that could nullify the results. See appendix-4 and 5 methodological quality and characteristics, with every effort taken to reduce bias within this review. Also, this review consisted of RCT’s of which a well-recognised CASP tool was utilised, along with guidance from Joanna Briggs Institute (JBICAT) (2017) critical appraisal checklist specific to the design of the study, due to its methodological rigour and being easier to understand.

## 3.5 – INDIVIDUALISED CRITICAL APPRIASIAL OF REVIEWED STUDIES

### Article 1:

**Guo, P., East, L. and Arthur, A., 2012. A preoperative education intervention to reduce anxiety and improve recovery among Chinese cardiac patients: A randomized controlled trial. *International Journal of Nursing Studies*, 49(2), pp.129-137.**

Guo, East and Arthur (2012) study utilized a randomized controlled trial (RCT) design to determine whether preoperative intervention on Chinese patients reduces anxiety and improve recovery.

Themes derived:

Prevalence of anxiety among cardiac patients

Patient anxiety may be due to inadequate unstructured information

.

The study design was clearly stated with a focused question. A total of 153 patients were enrolled initially in the study. However, 18 was lost to follow-up, leaving 135, which suggest an ample sample size to allow a supported conclusion (Abraham, 2018). The participants and setting appear detailed. (Joanna Briggs Institute, 2017) recommended this benefit another researcher when applying relevance to their location. Inclusion and exclusion criteria were clearly stated, but exclusions such as language barriers, history of previous cardiac surgery and illiteracy possess a risk for selection bias.

The study method appeared to be well described and adopt appropriate statistical analysis.However, this study reveals confounding factors for anxiety and highlights the study limitation of unstructured information within the study. Equally, the study utilizes the hospital anxiety and depression scale (HADS), noted to be valid and reliable (Djukanovic, Carlsson and Årestedt, 2017). Also, this study pointed out ethical considerations, suggesting voluntary consent and freedom to withdraw from the study.

In conclusion the study revealed that the majority of the patient was anxious. However, the downside is that this study did not capture the reason for the anxiety. Additionally, the patient was educated as a group rather than an individual. A group education may have impacted PCE, hindering SDM and individual sharing what matters most. Thus, could affect the validity of the result to other practice. (Ladha and Wijeysundera, 2020). Nonetheless, whilst this study did not reveal any new knowledge, findings suggest anxiety can lead to a patient refusing to have surgery. Additionally, the study iterates the need for preoperative education in improving postoperative outcomes.

### Article 2:

Granziera, E., Guglieri, I., Del Bianco, P., Capovilla, E., Dona’, B., Ciccarese, A., Kilmartin, D., Manfredi, V. and De Salvo, G., 2013. A multidisciplinary approach to improve preoperative understanding and reduce anxiety. *European Journal of Anaesthesiology*, 30(12), pp.734-742.

This quantitative study outline that a multidisciplinary approach is the best to reduce anxiety in the preoperative stage. It reveals the need for a more client-centred approach when patients undergo anaesthesia.

Themes derived:

* Multiple disciplinary approaches include a psycho-oncologist to understand individual patients’ communication styles to foster better health outcomes.
* A multidisciplinary approach promotes patients’ understanding of anaesthesia to reduce anxiety in the preoperative period.
* Patient confidence in their doctor or healthcare provider leads to a more positive perioperative outcome.
* We need to move from the traditional service approach to a more patient-centred approach.

Granziera et al. (2013) study abstract offers a clear overview of the study. On the contrary, the title appears ambiguous as the focus was only on patients understanding of anaesthetists’ information. This Clarke and Collier (2015) suggest potentially may be misleading and could influence the believability of this study. The study utilised a sample size of 251 patients, appears adequate. Additionally, study data noted a specific collection period. This Parahoo (2014) suggest confirmability and accuracy of the study.

 The study utilises a quantitative approach supported using a clear hypothesis that appears appropriate for this study. Thus, (Polit and Beck, 2018) suggest that a hypothesis is invaluable when used in quantitative methods, as it predicts an expected outcome and highlights what the researcher is set to find.

Patients were randomised using a computer-generated stratified block scheme. Whilst this approach appears suitable, a downside (Suresh, 2011) argued as it relies on the researcher ability to appropriately identify and assign all individuals into a subgroup within that population. However, questionnaires were adopted from a well-known tool, adding reliability and validity. A response rate of 100 % was noted, with only 17 questionnaires of 251 participants. Thus, Burke and Hodgins (2015) added that this method significantly reduces participants’ dropouts and low response rates, which may otherwise be lost to follow-up or postal response.

Whilst ethical consideration was noted, there was no mention of guaranteed confidentiality of the participants. Inclusion criteria were moderately clear, whilst exclusion criteria data were not clearly stated. The rationale for the age limit of 70 was not justified, denoting possible selection bias. Similarly, study participants and researchers were not blinded. This Hróbjartsson et al. (2014) argue increased the risk of bias in the study’s outcome.

Despite the above, the research methodology was transparent and the data gathering instrument was clearly described and noted to be reliable and valid. A pilot study added validity to the study (Parahoo, 2014). Data and statistical analysis utilised using a two-sided t-test, X” test, ANOVA, and a linear mixed model approach appear to be appropriate. Findings were significant as noted a reduction in anxiety in the intervention group (10.2 points, 95%CI7.4 to 13.0, n=57 compared to the standard group (6.8 points, 95%C1 3.8 to 9.8, n=50), P=0.024.

In conclusion, the study’s discussion addresses recommendations for future research. However, the study supports other studies’ findings of the prevalence of anxiety among surgical patients. It is known that each patient’s reason for anxiety generally varies, which could be either surgical or anaesthesia related. Another notable finding is that a communication specialist seeing the patient prior to an anaesthetist visit may enhance communication by tailoring information according to individual needs. Although intervention appears valuable in support of PCC in reducing anxiety; however, a communication specialist intervention may not be necessarily cost-effective. Therefore, as findings only support anaesthetist information for anxiety, suggesting findings may have to be used with caution.

### Article 3:

**Huber, J., Ihrig, A., Yass, M., Bruckner, T., Peters, T., Huber, C., Konyango, B., Lozankovski, N., Stredele, R., Moll, P., Schneider, M., Pahernik, S. and Hohenfellner, M., 2012. Multimedia Support for Improving Preoperative Patient Education: A Randomized Controlled Trial Using the Example of Radical Prostatectomy. *Annals of Surgical Oncology*, 20(1), pp.15-23.**

Huber et al. (2013) RCT from Germany provides insight into multimedia education (MME) on patient satisfaction and anxiety, the sample size of 203 participants who undergo radical prostatectomy.   Themes derived:

MME led to complete satisfaction and increased knowledge

MME equally decreases anxiety and improve decision-making

MME is superior to traditional education (SE).

The study lends itself to a quantitative design, espousing a positivist view (Yilmaz, 2013). A quantitative approach was appropriate for this study and was supported using clearly defined inclusion and exclusion criteria. All participants shared a common characteristic as they had surgical intervention. This (Yilmaz, 2013) concur can aid the generalisable of the study to other populations.

Similarly, the researchers took a purposeful and representative sampling approach (El-Masri, 2017), the largest sample size to use MME to include a wide range of socio-demographic statuses. Moreover, (El-Masri, 2017) concur that adequate sample size can determine the research’s overall efficacy. Faber and Fonseca (2014) argues that recruiting a large sample size will consolidate findings and validate the study.

The study utilised RCT with parallel and equal allocation. (Suresh, 2011) concur effective when comparing two treatment groups and minimises allocation bias. . The researcher explicitly explores ethics and the consent process, suggesting acknowledgement of the participant’s right to withdraw from the study.

Furthermore, the study questionnaire was utilised with STAI, a well-known validated standardised tool for anxiety. The researchers initiated and closed the study with less than 10percent loss to follow-up, indicating an adequate returns rate. Researchers also structured the investigations using a multivariate logistic regression model; this allows for the breakdown of predicted variables, (Keith, 2019);inevitably allowing for statistical analysis of more than one outcome.

Data analysis can often be categorised as exploratory or confirmatory (Luo, Xu and Liu, 2015). This study has sought exploratory analysis, proving validation of one’s hypothesis. The 95% confidence interval odds ratio was utilised to estimate the associated strength variables. Greenhalgh (2019) concur with parametric statistics and measure the outcome’s strength between variables. The study supports existing knowledge that MME, when properly executed, is superior to SE. Whilst, generalizability may be affected as the population was all male. Nevertheless, their findings suggest MME improve patient knowledge, reduces anxiety and improves satisfaction.

### Article 4:

**Wongkietkachorn, A., Wongkietkachorn, N. and Rhunsiri, P., 2017. Preoperative Needs-Based Education to Reduce Anxiety, Increase Satisfaction, and Decrease Time Spent in Day Surgery: A Randomized Controlled Trial. *World Journal of Surgery*, 42(3), pp.666-674.**

Wongkietkachorn, Wongkietkachorn and Rhunsiri, (2017.) RCT from Kamphaeng Thailand provides insight that patient-needs based education plays a critical role in anxiety reduction, increasing patient satisfaction and decreasing length of stay in day surgery compared with traditional patient education.

 Themes derived:

* Patient-needs based education reduce LOS anxiety and increase patient satisfaction.
* Needs-based education is superior to traditional patient education.
* Need to identify and educate based on individual patient coping style.

The study consisted of 450 participants with both the intervention and control group had similar characteristics, suggesting a purposeful and representative sampling approach (Descombe, 2014). Also, address a focused question and is supported using a clear hypothesis. The study aimed to explore anxiety objectively. (Creswell and Creswell, 2018) concur suitable when determining phenomena of causals effect. RCT was single-blinded with an allocation ratio1:1 in which participants were blinded to the intervention. This randomised approach appears adequate in removing systematic bias (Page et al., 2016). Thus, a quantitative approach was appropriate as the study was context-based findings and could be generalised.

The study completed questionnaires were anonymously analysed. Moreover, questionnaires were completed on-site, which indicates a 100% return rate, which could otherwise be lost to follow-up and postal votes. The study protocol was clearly defined and was approved and registered by the approved Ethics Committee. Thus, suggesting that standards of research results are creditable and accurate while protecting the participants' rights, integrity, and confidentiality (Vijayananthan and Nawawi, 2008). The control group received the intended treatment and was not compromised. Thus, adhering to the ethical principles, one could imply that the benefits outweighed the risk.

Inclusion and exclusion were clearly stated. However, illiteracy exclusion of participants could suggest selection bias. The researcher adopted power calculation to derive the study sample size. However, Greenhalgh (2019), emphasise the use of power calculation for adequate sample size.

In conclusion the study complements existing knowledge regarding anxiety prevalence in surgical patients. Also, support existing findings of PCC or tailored information linked to quality outcomes in the 21st century. Moreover, the contrary highlights the new finding that needs-based education is less time-consuming. Whilst the study of surgical procedures may not apply to all settings, the study highlights that any surgical procedure can cause anxiety. Similarly, the intervention appears to be cost-effective in implementing PCC to reduce or prevent anxiety in the perioperative period. Thus, results could be deemed applicable to practice and the UK hospital population.

### Article 5:

**Tiwari, T., Rajput, S. and Chaudhary, A., 2021. Effect of preoperative multimedia based video information on perioperative anxiety and hemodynamic stability in patients undergoing surgery under spinal anesthesia. *Journal of Family Medicine and Primary Care*, 10(1), p.237.**

Rajput, Tiwari and Chaudhary (2021) study are from India, utilised a prospective quantitative design; consisting of 80 participants undergoing limb surgery. Reiterates that preoperative multimedia-based video information effectively reduces perioperative anxiety and improves hemodynamic stability.

Themes derived:

* An educational video can reduce anxiety prior to surgery
* Combined education videos with traditional methods can lead to improving outcome
* Video information is easier to understand.
* Video information provides adequate information to the patient with poor illiteracy and comprehension.

The study ascertains the significance of educational video on anxiety reduction and compares multimedia base information's efficacy to verbal and written preoperative education. Hariton and Locascio (2018) advocate that RCT is frequently used for evidence-based practice as the need to assess using statistical methods objectively.

 The study states that a clear hypothesis and allocation sequence was concealed. Whilst participants were blinded, investigators were not. Additionally no mention of blinding while analysing the data. Whilst this may interfere with the methodical soundness of the study. Bhide, Shah and Acharya (2018) concur that RCT design minimises allocation and selection bias, enhances statistical stability, and adds reliability and validity to the study.

The study adopted an explicit inclusion and exclusion of people with hearing and visual impairments, suggesting possible selection bias, though one could conclude was considered. In addition, despite the restrictive inclusion and exclusion criteria as all were considered for limb surgery, suggest a purposeful sampling approach (El-Masri, 2017).

The researcher utilised the Amsterdam preoperative anxiety and information scale APAIS questionnaires to capture 4point data suggest a downside to utilising power calculation is that it is prone to suggest a larger sample size. (Kaplan, Chambers and Glasgow, 2014) support this added may be costly due to the demands of more resources from the investigators.

Ethical approval and written informed consent were noted in the study. There were no elaboration on the patient rights to withdraw from the study. However, the study mentioned that 5 participants declined, suggesting informed consent was considered. Similarly, the study suggests that the control group received the treatment intended. Thus, one could assume adequate ethical consideration, voluntary consent and the right to withdraw.

Additionally, the researcher utilised the independent Student's test, chi-square test and the overall analysis using SPSS software. Confidence interval of 95%reported. (Aggarwal and Ranganathan, 2016) suggest SPSS version 23.0 hold strong evidential potentials in preventing data errors.

In summary, the study findings may have been compromised via mention limitation of only study participants undergoing limb operation, had no hearing and vision impairments and were fit to have regional anesthesia. Additionally, the sedative was given to all participants of both groups. Arguable that the sedative may have a bearing on the outcome of the study. Thus, affecting the study’s overall validity. Also, limitations may affect applicability to generalise the finding to other practices. Despite the limitation, the study support earlier findings of multimedia as additional information that has a positive outcome in reducing anxiety in the perioperative period. Similarly, video information has improved benefits to people with poor illiteracy and comprehension skills.

### Article 6:

**Kalogianni, A., Almpani, P., Vastardis, L., Baltopoulos, G., Charitos, C. and Brokalaki, H., 2016. Can nurse-led preoperative education reduce anxiety and postoperative complications of patients undergoing cardiac surgery? *European Journal of Cardiovascular Nursing*, 15(6), pp.447-458.**

Kalogianni et al. (2016) RCT from Greece consisted of 595 participants. The study evaluates the effectiveness of a nurse-led preoperative education on anxiety and postoperative outcome. Found nurse-led education to be effective in reducing anxiety and postoperative complication. However, the study did not find nurse-led education to reduce readmission or length of stay effectively.

Themes derived:

* Nurse-led education by a preoperative specialist can reduce anxiety and postoperative complication prior to cardiac surgery.
* Preoperative teaching and preparation completed over 3 to 4 days, allowing time for individualised education.

The study was logically organised with a clear hypothesis and research problem. The design was appropriate for this study. (Polit and Beck, 2018) assert that RCT is the gold standard for an evidence-based practice seeking statistical and objective measurements.

Participants were randomised to groups by their numbers, odd numbers to intervention and even numbers to the control group. (Bhide, Shah and Acharya, 2018) suggest that patients who met the inclusion criteria had an equal chance of selection, thus reducing selection bias. The study did not explicitly mention the blinding of assessors. Also unclear whether participants were blinded. However, exploration of the study suggests that only first-time surgical participants were included. The preoperative education for the intervention and control group was done in a separate location of the hospital. Additionally, the nurses’ who did the teaching were not involved in the allocation or analysis of the result, suggesting consideration in allocation concealment and blinding of participants, adding reliability and validity to the study (Sil et al., 2019).

The researcher declares a follow-up rate of 100% to both study groups. Indicating no loss, with could otherwise have skewed the results. However, the sample size was computer generated. (Kaplan, Chambers and Glasgow, 2014) argue allows for adequate sample size. Additionally, the study reflected the observance of clear ethical principles, thus suggesting vigilance of participant’s anonymity and that benefit versus risk ratio was considered. In analysing the results, the researcher utilises parametric statistics with the Alpha value set at 0.05. Greenhalgh (2019) suggest that quantitative and parametric statistics can evaluate the outcome’s strength between variables. Overall, tests appear suitable for the study.

The study highlights that specialist knowledge has a vast impact on PCE, reducing preoperative anxiety and postop complications. However, but not readmission rate. Arguable that a reduction of complications could lead to reducing readmission. Whilst results of the secondary outcome of nurse-led negative effect on readmission rate appear conflicting. These findings are significant and may apply to the local population. However, the study’s limitations may have reduced the overall validity in supporting its implementation to practice.

### Article 7:

**Lin, S., Huang, H., Lin, S., Huang, Y., Wang, K. and Shi, H., 2016. The effect of an anesthetic patient information video on perioperative anxiety. *European Journal of Anesthesiology*, 33(2), pp.134-139.**

This RCT from Taiwan consists of 100 participants. Provides insightful information on incorporating audio-visual tools to provide surgical patients with better understanding and recall during the preoperative stage of a surgical procedure. The result demonstrated that patients who watched educational videos prior to sugary experienced significantly less anxiety during the preoperative stage.

Themes derived:

* Anaesthesia video information reduces preoperative anxiety and improves patient satisfaction after general surgery.
* Increased anxiety in surgical patients lead to poorer surgical outcome
* Audio-visual video + narrative instruction is superior to written information as it provides optimistic anticipation and emotional care.

Lin et al. (2016) study utilised a quantitative design, exposing a positivist view. The study addressed a focused question, but this study had explicit inclusion and exclusion criteria suggest selection bias was considered. On the contrary, it lacks concealment and blinding of assessors. Similarly, the study has a control and intervention group for comparison, but (Bhide, Shah and Acharya, 2018) concur that RCT remains the peak of the hierarchy of evidence. Additional, this study sought to inform clinical understanding suggesting study design was appropriate.

The study noted ethical considerations to both participants and researchers. Suggests minimal to no harm to participants (Fourak, Georgia & Mantzorou, 2018). Whilst, the study did not report an intension –to-treat analysis. However, it utilises a well-known valid instrument to analyse anxiety adding, reliability and validity to the study.

In conclusion the researcher pointed out the need for more RCT in this area. Whilst, the study findings may not have found anything new. The study highlighted that unresolved preoperative anxiety progress to postoperative anxiety. Also, the prospect of anaesthetic video education effectiveness in reducing anxiety in the perioperative period. In addition, video education enhances patients' expectations, leading to greater satisfaction.

### Article 8:

**Lai, V., Ho, K., Wong, W., Leung, P., Gomersall, C., Underwood, M., Joynt, G. and Lee, A., 2020. 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. *BMJ Quality & Safety*, 30(3), pp.228-235.**

Lai et al., 2020a) RCT from Hong Kong consisted of 100 participants. This study assesses the effect of a preoperative multifaceted education intervention on patient and family satisfaction levels in the ICU and perioperative patients’ anxiety and depression measures.

Themes derived:

* Patients undergoing coronary artery bypass graft CABG surgery experience higher levels of preoperative anxiety and depression
* Increased preoperative anxiety affects both patients and family
* Video information combined with standard education and a tour of ITU improves patient satisfaction and may reduce preoperative anxiety in cardiac surgical patients.

The study took place in a single-centre, two-armed, parallel trial apply block randomization while, equating a holistic objective view and understanding of anxiety and depression on the patient and the family members. The study acknowledges blinding of assessor’s, participants and allocation concealment. Whilst, (Caldwell, Henshaw and Taylor, 2011) concurs that allocation is one of the critical components of concealment, (Barnish and Turner, 2017) highlights the probability of selection bias in block allocation.

However, this study’s exploration suggests that all bias was strongly considered, adding validity.

Additionally, the study lends itself to a pragmatic approach, espousing a positivist view (Yilmaz, 2013). (Maxwell, 2020) argue, effective for maximizing applicability and generalizability to practice. Anxiety prevalence of the poorer outcome in cardiac surgery led to this research study; a quantitative stance, concur, allows for comparison of interventions, an objective stance on the cause of phenomena and interpretation using statistical analysis. Thus a quantitative approach was appropriate for this study and is supported using a clear hypothesis. (Maxwell, 2020) supported this and added that quantitative methodology is suitable when testing intervention efficiency in a predictable clinical environment.

Similarly, the study suggest ethical principle was considered to both participants and researchers. In addition to a clearly defined study protocol suggesting uncompromised care to both control and study groups. However, the study adopted a power calculation, allowing 10% dropout to derive an appropriate sample size. (Descombe, 2014) suggests that an adequately powered sample size minimizes both type1 and two errors adding statistical reliability and validity.

Results were expressed in tables and bar charts. The intervention effects were reported, showing Cl of 95% and p valves of statistical significance of <0.05. Data analysis was conducted using a well-validated tool for satisfaction and anxiety. Results were reported for each outcome, including Student’s t-test, Mann-Whitney U test for parametric and non-parametric variables, and Group comparison using X or X Missing data was accounted Fisher’s exact test. (Mishra et al., 2019) concur suitably in the above test situation, thus suggesting an appropriate statistical method for data analysis.

To conclude, the known limitation could have a bearing on the overall study result. In addition to other populations, the aspect of routine ITU care may not be applicable. Notwithstanding that, the results are essential to the population. This intervention appears cost-effective and could be modified to suit other clinical settings. Therefore, increases generalizability to the local population.

### 3.6 DATA EXTRACTION

The manual process of data extraction occurred by PRISMA guidelines (Moher et al., 2009) with the inclusion of PICO components. Full-text articles were read several times over with relevant data regarding the impact of preoperative education on anxiety and effects on nurses being recorded. Data extracted from the studies produced a table to highlight the study's title, authors, year of publication, research design, sample population, setting type and themes derived, Appendix 3.

3.7 DATA ANALYSIS AND SYNTHESIS

Williamson and Whitaker (2020) opine that data analysis aims to make complete sense of all information collected and simplify derived at a polished multifaceted synthesis of information. Once data extraction had been completed, a narrative synthesis was adopted to describe the study sample and themes. The primary themes were identified quality PCE on the quality outcome, PCE & combined video education, multidisciplinary education and specialist knowledge Also, a statistic analysis was conducted to estimate the effect of PCE for perioperative anxiety using validated tools such as STAI, APAIS and HADS mean-difference between intervention and control group). However, if either information was not available from the study, it was excluded from the meta-analysis.

Rousseau, Manning and Denyer (2011) argue that in amalgamating knowledge, a narrative synthesis is helpful to bring together the best evidence for statistical analysis. Petticrew and Roberts (2008) support and added that meta-analysis in SR is considered high-quality research; meta-analysis is not the end-all of synthesis. Similarly, Williamson and Whitaker (2020) suggest ‘no generally approved rules’ to data analysis.

With that said, these findings suggest that the quality of PCE, combined video and shared decision may positively contribute to preoperative anxiety reduction. It also positively impacts patients and families during the perioperative period.

## 4 RESULTS

### 4.1 SAMPLE CHARACTERISTIC/CONTEXT

A total of 1646 participants underwent treatment across the eight studies. All studies focus on preoperative education's impact in reducing anxiety on adult surgical patients. However, despite the available compelling literature surrounding the effect of PCE or PCC on the quality outcome, PCE is often not practised. However, up-to-date literature surrounding PCC or what matters to the patients in the perioperative field is lacking. PCC is an integral part to combat anxiety prevalence among surgical patients.

Four studies n=4) utilise STAI Questionnaire and others used Amsterdam Preoperative Anxiety n= 1, Hospital Anxiety and Depression Scale , n=3, with the mean age of 60. Female patients represented 60% of the total population. Reporting education from primary to university level occurred in all eight studies (Granziera et al., 2013) (Wongkietkachorn, Wongkietkachorn and Rhunsiri, n.d.)(Guo, East and Arthur, 2012) (Rajput, Tiwari and Chaudhary, 2021) (Huber et al., 2013) (Kalogianni et al., 2016) (Lin et al., 2016) (Lai et al., 2020a).

Four studies highlight the positive impact of PCC or PCE on anxiety; (Granziera et al., 2013) (Wongkietkachorn, Wongkietkachorn and Rhunsiri, n.d.) (Kalogianni et al., 2016) (Lai et al., 2020a). Whilst (Lai et al., 2020a) extended their sample group to looked at anxiety impact to both patients and family. One study found specialist knowledge and PCC effective in reducing anxiety (Kalogianni et al., 2016).

Only one study included non-formal education or primary and below instruction (Lai et al., 2020a). Two studies focus on anaesthetic information reducing anxiety (Granziera et al., 2013) (Lin et al., 2016). Whilst, four studies found MME overall to be beneficial to the patients. Two studies found that video information combined with preoperative education is superior to traditional education alone in reducing anxiety (Rajput, Tiwari and Chaudhary, 2021);(Lai et al., 2020a) Most of these review studies excluded participants with cognitive dysfunction, emotional instability, psychological disease, hearing or visual impairments. One study chose to exclude participants with a history of previous surgery (Kalogianni et al., 2016).

However, in keeping with the objective and title, a narrative synthesis followed by a quantitative synthesis on the impact of PCE on anxiety will be discussed.

### 4.2 Narrative Analysis

From the studies most occurring theme was positive impact of endorsing PCE and the quality delivery of education, in adult anxiety levels in the perioperative period (Granziera et al., 2013; Wongkietkachorn, Wongkietkachorn and Rhunsiri, 2017; Kalogianni et al., 2016; Lai et al., 2020).

(Berwick 2002) summarise PCC as quality outcome inclusive of an individual preference, autonomy and needs. Mirrored by (Munsey et al. 2021) who concur PCC also fosters purposeful relationship between patients families and the multidisciplinary team. Despite this, there is no standard policy in the perioperative setting in endorsing PCC in addressing the prevalence of anxiety among UK surgical patients.

Ahmad et al (2014);NMC (2018;Royal College of Nursing (2018;The NHS Long Term Plan (2019), all advocate the need for individualised care and share-decision making to promote better quality outcome that is really matters to the patients.

Two studies did not find education status to have any link to the patient’s varying anxiety level (Guo et al., 2018;Rajput, Tiwari and Chaudhary, 2021). However, the quality of how the education was given appears to take a more important factor rather than the time or mode of education (Aust et al., 2018). Complimentarily how the information was delivery plays a part in understanding what matters to the individual by utilising PCC. Video information and standard preoperative education is linked to better quality outcome (Rajput, Tiwari and Chaudhary, 2021).

Additionally, patients with poor Illiteracy and inherent anxiety due to major surgery found combination of video and standard education to be beneficial in reducing anxiety. Hence, producing better outcomes. Thus, PCE tailored to the patient in way in which they understand encourages decision making and fosters empowerment in their care.

Hence,(Frampton, Guastello and Lepore, 2013) concur compassion is essential to PCC. In contrast time constraint is a noted barrier for PCC. However, (Wongkietkachorn, Wongkietkachorn and Rhunsiri 2018) concur PCE are less time consuming compared to non-tailored education. Arguably, care that is tailored to the individual may take less time when compared to giving generalise information. Similarly, (Wongkietkachorn, Wongkietkachorn and Rhunsiri 2018) concur too little or too much can equally increase patient anxiety. Thus, suggesting effective communication, SDM and a caring attitude has a positive impact on PCC in reducing preoperative anxiety.

Another reoccurring theme is the potential benefits of MDA. MDA is paramount within the perioperative setting. An MDA to working is one in which practitioners of different specialities work together to ensure the best quality outcome for the patient . In the 21st century, (Davis, Schoenbaum and Audet, 2005) assert that PCA is one measure of defining quality of care. PCA, mirrored by (Bayrak, Sagiroglu and Copuroglu, 2019),argued that patient education is a vital aspect of nursing practice.

Similarly, (Wongkietkachorn, Wongkietkachorn and Rhunsiri 2018) study support a specialist practitioner such as a psychologist value in identifying the patient coping style in support of PCE in promoting quality outcome. Moreover, as part of the MDA, nurses often play a significant part in patient education within the literature. Likewise, (Kalogianni et al., 2016) suggest specialist knowledge of the nurse plays a curial role in giving adequate, clear information. Most of all, the nurse would be able to alleviate anxiety by answering questions tailored to the patient needs.

Likewise, (Ahmad et al., 2014) proposed that nurses are best posed to deliver education as able to connect in a way that provides the opportunity for PCC. Thus, one could conclude that nurses play a vital part in the process of PCE in combating increased anxiety during the preoperative period.

Furthermore, one could agree that a nurse completing a preoperative assessment with specialist knowledge can empathise with the patients and equally provide practical information to both the patient and family to promote a better outcome.

Likewise (Lai et al., 2020b) study recognised that family members in the same way could be anxious about their loved one undergoing surgery. Additionally, the benefit of PCA is that family members feel comfortable to have open communication to ask questions to which they need clarity. Ultimately, this helps alleviate their fears, boosting confidence to provide the necessary support during and after surgical procedures. Thus, healthcare givers, patients, and families form an integral part of PCC, influencing quality outcomes.

4.2 Statistical analysis

**Effect size of each study? Summary effect or Dispersion effects as function of a covariate??**

**Mean baseline anxiety levels shows that patient in both groups were severely anxious at preoperative assessment. The level was comparable between the two groups????**

## CHAPTER 5

### 5.0 DISCUSSION

This SR demonstrated that preoperative anxiety is common among surgical patients, regardless of the anesthesia type or surgical procedure . The study suggests that higher baseline anxiety levels were observed in both groups. These findings are supported by various studies across the globe (Alanazi, 2014); (Stamenkovic et al., 2018).

Equally, increased anxiety before surgery is linked to pathophysiological responses such as HTN, increased anaesthetic requirement and dysrhythmias. Similarly, (Guo, East and Arthur, 2012) concur that it may also result in patients refusing their planned surgery.

However, the delivery of tailored PCE could reduce perioperative anxiety. In turn, patients arguable become aroused much quicker following anesthesia. (Alanazi, 2014) agree, stating PE may result in decreased pain, decreased length of stay, minimises lifestyle disruption, improved satisfaction, and a better quality outcome.

Whilst, the ideal delivery strategy remains debatable. Written and verbal information is a standard effective method of delivering PE to patients;(Rajput, Tiwari and Chaudhary, 2021) suggested a combination of both proven to be an effective strategy in providing information.

Although both traditional methods may be effective, (Hoppe et al., 2014) suggest that multimedia can improve recall and knowledge retention. Similarly, (Guo, East and Arthur, 2012); (Lai et al., 2020a)Lai et al. 2019) study support multimedia suggesting verbal information reduces anxiety, aid recall and increases patient satisfaction.

Conversely, (Huber et al., 2013) reported no significant difference in anxiety between the two groups and no difference in knowledge. Therefore, (Huber et al., 2013) study inconclusiveness may be due to heterogeneity in interventions. Thus, the quest for quality outcome following discharge sees an increase in RCT studies on multimedia in the form of video to reduce preoperative anxiety and other quality outcomes such as satisfaction or knowledge (Guo, East and Arthur, 2012);(Dias et al., 2016).

 Regardless, multimedia may be inconclusive; may be effective in improving satisfaction and subsequent anxiety reduction. Moreover, in the practitioner practice, there is a clear benefit in support for multimedia in the form of video information as benefits could aid quality outcomes. Thus, SR has shown PCE to be effective in decreasing anxiety compared to the control group post-intervention. For example, one could agree that PCE video information benefits patients with poor literacy skills and a heightened anxiety state. Also could impact knowledge retention during PE (Rajput, Tiwari and Chaudhary, 2021).

The findings could conclude that all elective surgical intervention carries a risk of anxiety (Guo, East and Arthur, 2012); (Huber et al., 2013). Whilst a reasonable level appears acceptable, conflictingly, a heightened level can have debilitating effects, leading to poor quality of life. Likewise, (Mitchell, 2012) concur that the general contributing factor for anxiety may be surgery, anesthesia or both. Equally, argue that all individual differs so are their needs.

(Wongkietkachorn, Wongkietkachorn and Rhunsiri, 2017) found needs base education has a positive impact on patient outcomes. Whilst, most studies in this SR did not implicitly look at PCE, the studies that linked aspect of PCE appears to five a positive outcome in reducing anxiety within the preoperative period.

Equally important, PCE promotes SDM, which lead to patient empowerment (NMC, 2018). Evidence suggests empowerment and effective PCE can decrease the risk of surgical complications and reduce the chance of readmission (Kindler et al., 2000). In addition, SDM is linked to effective communication and treating each patient as an individual. Furthermore, (Lai et al., 2020a) suggest that patients’ literacy, educational level, and language are essential factors that PCC addresses. Thus, PCA leads to quality outcomes for patients and family members in reducing perioperative anxiety.

Conversely, multidisciplinary and specialist knowledge linked PCC to promote quality outcomes. Likewise, nurses frequently provide PE; however, PE provides the surgical patient with information about the surgical process, procedures, reassurance, common fears, and anxiety (Kruzik, 2009). Equally, one could agree that for PCC to be effective, it should include all members to whom the patient comes in contact prior to surgery. Similarly, the one with the crucial task of educating the patient could agree that without adequate knowledge about the procedures and communication skills hinders PCC.

Moreover, effective communication fosters trust and openness to allay the patient fear and anxiety. Additionally, (Kruzik, 2009), argued that inadequate PE coupled with a lack of postoperative information of what patients are to expect leads to unnecessary poor outcomes. Similarly, (Kalogianni et al., 2016) study supported nurse-led specialist knowledge in support of PCC, resulting in decreased anxiety. Likewise, (Lai et al., 2020a) concur that providing positive outcomes to both patient and family.

Furthermore, more research is needed on the impact or benefit of patient-centered education on preoperative anxiety and after discharge. Also, research needs to define ‘standard care’ or ‘usual care. Notwithstanding the above, PCC provides healthcare personnel with the opportunity not just to measure the surgical patient’s survival 30 days postoperative but the quality of life post-procedure.

Thus, PCE incorporating the 6C’s of nursing practice care, compassion, competence, communication, courage and commitment; proven to be a worthwhile health care intervention to reduce perioperative anxiety and improve overall patient care that leads to a better quality outcome (NMC, 2018;Health Education England, 2017;Kapur, 2020);Cheater, 2019).

5.1 Limitation of the study

This SR is subject to several limitations. First, the study only included quantitative studies from the adult population. Other inherent limitations include recall/ classification bias, confounding factors and inability to determine causation (Polit and Beck, 2018). Similarly, the included studies education has heterogeneity, coupled with varying anxiety scales may have weakened the evidence. For example, a qualitative design or combination design would further gain insight into the patient’s point of view on PCC. Also, the limitations of personal inexperience in reviewing literature at the master’s level.

Additionally, this study did not contain grey literature, as only an electronic database was utilised. Further, impose possible bias of review result. However, there was no recent UK study on the selected topic. Most studies took place in a single center and was either from international or European. Another aspect is that surgical approaches and procedures differs, which may impact the generalisation and validity of the results. Nevertheless, the surgery type is similar to the UK population. Therefore, it is reasonable to assume that the results from this study are still applicable and can be used to inform policymakers, patients and healthcare personnel.

5.2 Implications to practice of results

This SR suggests that patients want to be educated about their surgery and anaesthesia. The patients’ want IC with clear and consistent communication; in a caring, emphatic manner. PCE may improve recall (Jeon and Lee, 2018) and reduce Preoperative anxiety. More importantly a need to develop pathways and protocols to identify and respond to preoperative anxiety to progress quality outcomes.

Thus the following implications are below:

A PCA management is needed.

* A combination of written and verbal and video information is necessary.
* Awareness starting at general practitioners, surgeons, nurses and medical students.
* Training of staff to recognise patients with increased PCA to prevent progression postoperative anxiety
* Training to enable specific psychoeducational care
* Guidelines on how to manage during hospitalisation.
* Skilled nurses must provide specialist education.

5.3 AUTHORS RECOMMENDATIONS ON PRACTICAL APPLICATION OF RESULTS

* More mixed studies looking at the impact of PCC in reducing anxiety in the perioperative period
* Protocol implementation capturing anxiety levels in the preoperative stage while advocating PCC would enable clear guidelines which offer consistency.
* Qualitative research into how to reduce barriers to PCC
* Educational programmes are required to enhance the understanding and support of PCC at an organizational level and subsequent departmental level.

5.4 DISSEMINATION

Evidence-based practice involves the best research evidence to improve clinical decision making and knowledge exchange via dissemination to foster service improvement (Chesser-Smyth, 2013). Therefore, firstly circulate this paper to the surgeons' other team members to gain understanding and support for implementing findings. To gain agreement from surgeons to pilot study of the paper to meet the wider perioperative population. The opportunity to present these findings to the team of surgeons or executive level with the hope of local policy and pathway will be investigated.

Furthermore, this can provide evidence and the opportunity to undertake primary research in this area.

6.0 CONCLUSION

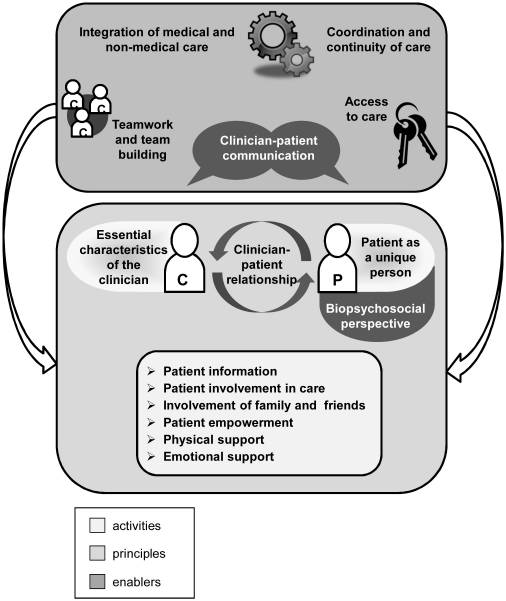
This critical review has identified that anxiety is multifaceted. Its prevalence is still a cause for morbidity and mortality within the perioperative stage. However, guidelines and clear evidence of perioperative implications are still lacking. The identified themes explored via narrative and statistical evidence, noted that PCE integrated verbal and written education and video information effectively for all patients. Similarly, effective for patients with poor illiteracy and surgery such as cancer, known to have inherent anxiety.

However, PCE is often not practised due to time constraints, healthcare professionals’ lack of knowledge and the importance of this stage of the surgical pathway. However, understanding patient coping styles and what matters promotes PCE, shared decision-making and quality outcomes. The quality of the education and how it was delivered noted an essential part in reducing anxiety. Nurses are still noted for their compassionate, emphatically qualities in reducing anxiety.

However, successful implementation of PCC requires management support. The need for evidence-based practice to complement perioperative pathways could identify highly anxious patients. In addition, PCE allows SDM to aid the family member’s involvement in the patient care. In turn enable empowerment and SDM among the patient, family members and health practitioner to promote a better outcome.

WC 10,958

**Appendix-1**



How to practice person-centered care: A conceptual framework Maria J. Santana PhD

**Appedix2: Literature Search**

I search the healthcare databases advanced search (HDAS); using Embase, Medline (medical databases) and CINAHL (nursing and allied healthcare information. Also adopted as mentioned above using the PICO strategy. I chose to select these three data bases as known to have reputable source of evidence (De Brun, 2013). Similarly, supported by Greenhalgh (2019) who added a downside to electronic data base is the broadness of it. However, the search consisted of Primary quantitative papers dated within 10 years.

To avoid a restrictive search, the use of Adjacency function and truncation was adopted: ADJ3. This puts for example patient anxiety adjacent within three words of each other in any order. The use of truncate using an asterisk at the end of patient\* were used to identify both terms, patient and patients with anxiety.  The use of Boolean operator ‘OR’ and ‘AND’ was also utilised. OR find the words either on their own or together while AND combine to narrow the search to find only the overlap between three different concepts of perioperative care, patient education and anxiety.

***Table 3 –*** *Summary of terms*

|  |  |  |
| --- | --- | --- |
| **Search term 1** | **Search term 2** | **Search term 3** |
| Pre-op\*  SURGERY, OPERATIVE  PERIOPERATIVE CARE  Preoperative | Patient education  Patient\* adj3 educate\*  Patient\* adj3 information\* | patient\*ADJ3 anx\*  patient\*ADJ3  Anxiety  ANTICIPATORY ANXIETY |

**Appendix-3**

****

**CASP Randomised Controlled Trial Standard Checklist:**

11 questions to help you make sense of a randomised controlled trial (RCT)

**Main issues for consideration:** Several aspects need to be considered when appraising a randomised controlled trial:

 Is the basic study design valid for a randomised controlled trial? (Section A)

 Was the study methodologically sound? (Section B)

 What are the results? (Section C)

 Will the results help locally? (Section D)

The 11 questions in the checklist are designed to help you think about these aspects systematically.

**How to use this appraisal tool:** The first three questions (Section A) are screening questions about the validity of the basic study design and can be answered quickly. If, in light of your responses to Section A, you think the study design is valid, continue to Section B to assess whether the study was methodologically sound and if it is worth continuing with the appraisal by answering the remaining questions in Sections C and D.

Record ‘Yes’, ‘No’ or ‘Can’t tell’ in response to the questions. Prompts below all but one of the questions highlight the issues it is important to consider. Record the reasons for your answers in the space provided. As CASP checklists were designed to be used as educational/teaching tools in a workshop setting, we do not recommend using a scoring system.

**About CASP Checklists:** The CASP RCT checklist was originally based on JAMA Users’ guides to the medical literature 1994 (adapted from Guyatt GH, Sackett DL and Cook DJ), and piloted with healthcare practitioners. This version has been updated taking into account the CONSORT 2010 guideline (<http://www.consort-statement.org/consort-2010>, accessed 16 September 2020).

**Citation:** CASP recommends using the Harvard style, i.e., *Critical Appraisal Skills Programme (2021). CASP (insert name of checklist i.e. Randomised Controlled Trial) Checklist. [online] Available at: insert URL. Accessed: insert date accessed.*

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Critical Appraisal Skills Programme (CASP) [www.casp-uk.net](http://www.casp-uk.net/) Part of OAP Ltd

**Study and citation:** ........................................................................................................................

**Section A: Is the basic study design valid for a randomised controlled trial?**

|  |  |  |
| --- | --- | --- |
| **1**. | **Did the study address a clearly focused research question?**  *CONSIDER:*   * *Was the study designed to assess the outcomes of an intervention?* * *Is the research question ‘focused’ in terms of:* * *Population studied* * *Intervention given* * *Comparator chosen* * *Outcomes measured?* | Yes No Can’t tell   |
| **2**. | **Was the assignment of participants to interventions randomised?**  *CONSIDER:*   * *How was randomisation carried out? Was the method appropriate?* * *Was randomisation sufficient to eliminate systematic bias?* * *Was the allocation sequence concealed from investigators and participants?* | Yes No Can’t tell   |
| **3**. | **Were all participants who entered the study accounted for at its conclusion?**  *CONSIDER:*   * *Were losses to follow-up and exclusions after randomisation accounted for?* * *Were participants analysed in the study groups to which they were randomised (intention-to-treat analysis)?* * *Was the study stopped early? If so, what was the reason?* | Yes No Can’t tell   |

**Section B: Was the study methodologically sound?**

|  |  |  |
| --- | --- | --- |
| **4**. | * **Were the participants ‘blind’ to intervention they were given?** * **Were the investigators ‘blind’ to the intervention they were giving to participants?** * **Were the people assessing/analysing outcome/s ‘blinded’?** | Yes No Can’t tell       |
| **5**. | **Were the study groups similar at the start of the randomised controlled trial?**  *CONSIDER:*   * *Were the baseline characteristics of each study group (e.g. age, sex, socio-economic group) clearly set out?* * *Were there any differences between the study groups that could affect the outcome/s?* | Yes No Can’t tell   |

|  |  |  |
| --- | --- | --- |
| **6**. | **Apart from the experimental intervention, did each study group receive the same level of care (that is, were they treated equally)?**  *CONSIDER:*   * *Was there a clearly defined study protocol?* * *If any additional interventions were given (e.g. tests or treatments), were they similar between the study groups?* * *Were the follow-up intervals the same for each study group?* | Yes No Can’t tell   |

**Section C: What are the results?**

|  |  |  |
| --- | --- | --- |
| **7**. | **Were the effects of intervention reported comprehensively?**    *CONSIDER:*   * *Was a power calculation undertaken?* * *What outcomes were measured, and were they clearly specified?* * *How were the results expressed? For binary outcomes, were relative and absolute effects reported?* * *Were the results reported for each outcome in each study group at each follow-up interval?* * *Was there any missing or incomplete data?* * *Was there differential drop-out between the study groups that could affect the results?* * *Were potential sources of bias identified?* * *Which statistical tests were used?* * *Were p values reported?* | Yes No Can’t tell   |
| **8.** | **Was the precision of the estimate of the intervention or treatment effect reported?**  *CONSIDER:*   * *Were confidence intervals (CIs) reported?* | Yes No Can’t tell   |
| **9**. | **Do the benefits of the experimental intervention outweigh the harms and costs?**  *CONSIDER:*   * *What was the size of the intervention or treatment effect?* * *Were harms or unintended effects reported for each study group?* * *Was a cost-effectiveness analysis undertaken? (Cost-effectiveness analysis allows a comparison to be made between different interventions used in the care of the same condition or problem.)* | Yes No Can’t tell   |

|  |
| --- |
| **Section D: Will the results help locally?** |

|  |  |  |
| --- | --- | --- |
| **10**. | **Can the results be applied to your local population/in your context?**  *CONSIDER:*   * *Are the study participants similar to the people in your care?* * *Would any differences between your population and the study participants alter the outcomes reported in the study?* * *Are the outcomes important to your population?* * *Are there any outcomes you would have wanted information on that have not been studied or reported?* * *Are there any limitations of the study that would affect your decision?* | Yes No Can’t tell   |
| **11.** | **Would the experimental intervention provide greater value to the people in your care than any of the existing interventions?**  *CONSIDER:*   * *What resources are needed to introduce this intervention taking into account time, finances, and skills development or training needs?* * *Are you able to disinvest resources in one or more existing interventions in order to be able to re-invest in the new intervention?* | Yes No Can’t tell   |
|  |  | |
| **APPRAISAL SUMMARY:** *Record key points from your critical appraisal in this box. What is your conclusion about the paper? Would you use it to change your practice or to recommend changes to care/interventions used by your organisation? Could you judiciously implement this intervention without delay?* | | |

Appendix4: Quality of included study

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Author | Radom allocation | Concealed allocation | Groups similar at baseline | Participant blinding | Therapist or Educator /other blinding | Assessor blinding | < 15% dropouts | Intention-to-treat-analysis | Between group difference reported | Point estimate and variability reported | Total  (10-50) |
| Huber et al. (2013) | yes | yes | yes | no | no | no | yes | yes | yes | yes | Good  (32) |
| Granziera et al.(2013) | yes | no | yes | not mention | no | no | yes | yes | yes | yes | Good |
| Kalogianni et al. (2016) | yes | no | yes | not mention | not mention | not mention | yes | yes | yes | yes | Good |
| Kim et al. (2019) | no | no | yes | no | no | no | yes | no | no | yes | Fair |
| Lai et al. (2020) | Yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | Good |
| Guoa et al. (2012) | yes | yes | yes | not mentioned | not mentioned | no | yes | no | yes | yes | Good |
| Rajput, Tiwari and Chaudhary (2021) | yes | yes | yes | yes | no | no | yes | no | yes | yes | Good |
| Wongkietkachorn,Wongkietkachorn and Rhunsiri (2017) | yes | yes | yes |  |  |  |  |  |  |  | Good |

Appendix 5:

Characteristic of included studies

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Author/Country | Sample Characteristic | Study design | Population | Intervention | Control group | Outcomes | Main Findings |
| Huber et al. (2013)  Germany | N=203 male | RCT | Elective surgical urology patients | E: received multi-media supported education (MMM)  mNRS information scale | Standard preoperative education | State-Trait anxiety (STAI) | No significant difference between the E and C group...  anxiety levels were higher according to the severity of the procedure |
| Granziera et al.(2013)  Italy | N=251 female  Female100%  Median age range  IPA53.4 & SAI 53.6 | RCT | Women undergoing surgery for primary breast cancer | STAI questionnaire  IPA | STAI questionnaire  SAI | - anxiety  -subjective perception of anesthesia information | .A multidisciplinary approach, to promote patients understanding of anesthesia to reduce anxiety in the preoperative period.  Patient confidence in their healthcare provider leads to a more positive perioperative outcome.  Patient centered approach better than the traditional service approach |
| Kalogianni et al. (2016)  Greece | N=395  Men140 C  &145 I  Female-C 50 & 60 I | RCT | Cardiac elective patients  395 patients | E: **Edu by trained specialist nurses**  **-Baseline STAI (Before randomization)**  State–trait anxiety inventory @3 point (1) on admission-A  (2) before surgery-B  (3) before discharge-C | **Standard information by the ward personnel**  Baseline STAI  State–trait anxiety inventory @3 point (1)on admission-A  (2) before surgery-B  (3) before discharge-C | -Anxiety  -postop outcomes of readmissions or length of stay | Nurse-led education by preoperative specialist can reduce anxiety and postoperative complication prior to cardiac surgery  Lower proportions of chest infection were found in the intervention.  No significant difference was found in the length of stay or readmission |
| Lin et al (2016)  Taiwan | General Surgery *N* = 100 Age (mean): | RCT | GS | **INT: Inpatient video** 8-min  Before & After video | C | -Anxiety -STAI | Audio-visual video + narrative instruction is superior to written information as can aid recall and understanding of surgery and anesthesia.  **A** |
| Lai et al. (2020)  Hong Kong | Coronary artery bypass graft (CABG)  N=100  M( I) 43+ (C)38  F= 7 (I) & 12 (C) | RCT | CABG | INT-Video, ITU tour +standard education | Standard education | Satisfaction of both patient & family (using validated PS-ICU23 and FS-ICU24 questionnaires (0–100), respectively  Anxiety  Depression  (change in perioperative anxiety and depression scores between 1 day pre-surgery and 3 days post-surgery) | Increase preoperative anxiety affects both patients and family  Video information combined with standard education and tour of ITU improves patient satisfaction and may reduce preoperative anxiety |
| Guo et al. (2012)  China | Sample- n=135 | RCT | Major elective cardiac surgery | Preoperative education + information leaflet + verbal advice | Usual care | Anxiety  Primary outcome-The Hospital Anxiety and Depression Scale (HADS)  Secondary outcome  Change in depression (HADS) | .  Great decrease in anxiety among experimental group comparing with control group |
| Rajput, Tiwari and Chaudhary (2021)  India | N=80  Age18-60  Undergoing a limb surgery | -RCT (prospective) | - Elective limb surgery | -Standard education + 12 min multimedia video  -Pre-op baseline using Amsterdam pre‑operative anxiety and information scale (APAIS) + hemodynamic parameters  (Systolic blood pressure (SBP),  diastolic blood pressure (DBP) and heart rate (HR).  -Repeat above post-op | Standard education (verbal information)  Pre-op baseline (APAIS) + hemodynamic parameters  Repeat above post-op | -Anxiety  baseline (APAIS) + hemodynamic parameters | Educational video can reduce anxiety prior to surgery  Combined education videos with traditional method can led to improve outcome  Video information provide adequate information to patient with poor illiteracy and comprehension. |
| Wongkietkachorn, Wongkietkachorn and Rhunsiri (2017)  Thiland | N=450 | RCT | Elective day surgery | E: Needs-based education | C: Standard education | Anxiety-(Primary outcome)  STAI & Visual analogue scale (VAS)  Baseline, before surgery, after surgery  Secondary outcome-satisfaction | patient-needs based education reduce LOS, anxiety, and increase patient satisfaction  Needs-based education is superior to traditional patient education.  Need to identify and educate based on individual patient coping style |

## References

Abbas, S.M., Kahokehr, A., Mahmoud, M. and Hill, A.G., 2010. The Simple Prognostic Index (SPI) - A pathophysiologic prognostic scoring tool for emergency laparotomy. *Journal of Surgical Research*, 163(2).

Abraham, J., 2018. Nursing Research an Introduction 3rd Edition. *Journal of Perioperative Practice*, [online] 28(9), pp.209–209. Available at: <http://journals.sagepub.com/doi/10.1177/1750458918775048>.

Aggarwal, R. and Ranganathan, P., 2016. Common pitfalls in statistical analysis: The use of correlation techniques. *Perspectives in Clinical Research*, 7(4).

Ahmad, N., Ellins, J., Krelle, H. and Lawrie, M., 2014. Person-centred care: from ideas to action. *The Health Foundation*.

Alanazi, A.A., 2014. Reducing anxiety in preoperative patients: A systematic review. *British Journal of Nursing*, 23(7), pp.387–393.

Allen, M., 2017. Confidentiality and Anonymity of Participants. In: *The SAGE Encyclopedia of Communication Research Methods*.

Anon 2005. Institute for Health-care Improvement. *International Journal of Health Care Quality Assurance*, 18(1).

Anon 2019. *The NHS Long Term Plan*. [online] Available at: <www.longtermplan.nhs.uk>.

Atkinson, L.Z. and Cipriani, A., 2018. How to carry out a literature search for a systematic review: a practical guide. *BJPsych Advances*, 24(2).

Aust, H., Eberhart, L., Sturm, T., Schuster, M., Nestoriuc, Y., Brehm, F. and Rüsch, D., 2018. A cross-sectional study on preoperative anxiety in adults. *Journal of Psychosomatic Research*, 111.

Aveyard Helen, Payne Sheila and Preston Nancy, 2016. A Post-graduate’s Guide to Doing a Literature Review: in Health and Social Care. *Open University Press, Nursing Standard*, 30(51).

Balint, E., 1969. The possibilities of patient-centered medicine. *Journal of the Royal College of General Practitioners*, 17(82).

Barnish, M. and Turner, S., 2017. The value of pragmatic and observational studies in health care and public health. *Pragmatic and Observational Research*, Volume 8.

Bayrak, A., Sagiroglu, G. and Copuroglu, E., 2019. Effects of preoperative anxiety on intraoperative hemodynamics and postoperative pain. *Journal of the College of Physicians and Surgeons Pakistan*, 29(9).

Beauchamp,T.and Childress,J.,2013. Eighth edition Revised edition of:Principles of biomedical ethics. 7th ed.

Berwick, D.M., 2002. A user’s manual for the IOM’s ‘quality chasm’ report. *Health Affairs*, 21(3).

Bhide, A., Shah, P.S. and Acharya, G., 2018. *A simplified guide to randomized controlled trials*. *Acta Obstetricia et Gynecologica Scandinavica*, .

Blomberg, A.C., Bisholt, B. and Lindwall, L., 2018. Responsibility for patient care in perioperative practice. *Nursing Open*, 5(3).

Bossaert, L.L., Perkins, G.D., Askitopoulou, H., Raffay, V.I., Greif, R., Haywood, K.L., Mentzelopoulos, S.D., Nolan, J.P., Van de Voorde, P., Xanthos, T.T., Georgiou, M., Lippert, F.K. and Steen, P.A., 2015. European Resuscitation Council Guidelines for Resuscitation 2015. Section 11. The ethics of resuscitation and end-of-life decisions. *Resuscitation*, 95.

Britteon, P., Cullum, N. and Sutton, M., 2017. Association between psychological health and wound complications after surgery. *British Journal of Surgery*, 104(6).

De Brun, C., 2013. Useful Databases. *The Information Standard Useful Databases*.

Burke, M. and Hodgins, M., 2015. Is ‘Dear colleague’ enough? Improving response rates in surveys of healthcare professionals. *Nurse Researcher*.

Caldwell, K., Henshaw, L. and Taylor, G., 2011. Developing a framework for critiquing health research: An early evaluation. *Nurse Education Today*, 31(8).

Castro, E.M., Van Regenmortel, T., Vanhaecht, K., Sermeus, W. and Van Hecke, A., 2016. *Patient empowerment, patient participation and patient-centeredness in hospital care: A concept analysis based on a literature review*. *Patient Education and Counseling*, .

Cauley, C.E., Panizales, M.T., Reznor, G., Haynes, A.B., Havens, J.M., Kelley, E., Mosenthal, A.C. and Cooper, Z., 2015. Outcomes after emergency abdominal surgery in patients with advanced cancer: Opportunities to reduce complications and improve palliative care. *Journal of Trauma and Acute Care Surgery*, 79(3).

Chang, C.C., Lan, Y.T., Jiang, J.K., Chang, S.C., Yang, S.H., Lin, C.C., Lin, H.H., Wang, H.S., Chen, W.S., Lin, T.C. and Lin, J.K., 2019. Risk factors for delayed perineal wound healing and its impact on prolonged hospital stay after abdominoperineal resection. *World Journal of Surgical Oncology*, 17(1).

Cheater, S., 2019. *The NHS Long-Term Plan*. *International Journal of Health Promotion and Education*.

Chesser-Smyth, P., 2013. Encyclopedia of Nursing Research. *Nurse Education in Practice*, 13(5).

Christian, L.M., Graham, J.E., Padgett, D.A., Glaser, R. and Kiecolt-Glaser, J.K., 2007. *Stress and wound healing*. *NeuroImmunoModulation*, .

Clarke, S. and Collier, S., 2015. Research essentials. How to critique quantitative research. *Nursing children and young people*.

Cooke, A., Smith, D. and Booth, A., 2012. Beyond PICO: The SPIDER tool for qualitative evidence synthesis. *Qualitative Health Research*, 22(10).

Cooper, L.A., Ghods Dinoso, B.K., Ford, D.E., Roter, D.L., Primm, A.B., Larson, S.M., Gill, J.M., Noronha, G.J., Shaya, E.K. and Wang, N.Y., 2013. Comparative effectiveness of standard versus patient-centered collaborative care interventions for depression among African Americans in primary care settings: The BRIDGE study. *Health Services Research*, 48(1).

Coppola, A., Sasso, L., Bagnasco, A., Giustina, A. and Gazzaruso, C., 2016. *The role of patient education in the prevention and management of type 2 diabetes: an overview*. *Endocrine*, .

Creswell, J.W. and Creswell, J.D., 2018. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. *Research Defign: Qualitative, Quantitative, and Mixed M ethods Approaches*.

Cronin, P., 2013. How to do a Systematic Literature Review in Nursing. A Step-by-Step Guide. *Nurse Education in Practice*, 13(3).

Damhuis, R.A.M., Wijnhoven, B.P.L., Plaisier, P.W., Kirkels, W.J., Kranse, R. and Van Lanschot, J.J., 2012. Comparison of 30-day, 90-day and in-hospital postoperative mortality for eight different cancer types. *British Journal of Surgery*, 99(8).

Davis, K., Schoenbaum, S.C. and Audet, A.M., 2005. *A 2020 vision of patient-centered primary care*. *Journal of General Internal Medicine*, .

Department of Health and Social Care, 2019. *Advancing our health: prevention in the 2020s*. *Public Health Policy and Strategy*.

Descombe, M., 2014. *The good research guide for small scale research projects. Part 1. Strategies for social research.* *Open University Press*.

Desserud, K.F., Veen, T. and Søreide, K., 2016. *Emergency general surgery in the geriatric patient*. *British Journal of Surgery*, .

Dias, R., Baliarsing, L., Barnwal, N.K., Mogal, S. and Gujjar, P., 2016. Role of pre-operative multimedia video information in allaying anxiety related to spinal anaesthesia: A randomised controlled trial. *Indian Journal of Anaesthesia*, 60(11).

Djukanovic, I., Carlsson, J. and Årestedt, K., 2017. Is the Hospital Anxiety and Depression Scale (HADS) a valid measure in a general population 65-80 years old? A psychometric evaluation study. *Health and Quality of Life Outcomes*, 15(1).

Donnelly, M., 2009. Best interests, patient participation and the mental capacity act 2005. *Medical Law Review*, 17(1).

Edwards, P.K., Mears, S.C. and Lowry Barnes, C., 2017. *Preoperative Education for Hip and Knee Replacement: Never Stop Learning*. *Current Reviews in Musculoskeletal Medicine*, .

England, N., 2020. *NHS England » The Change Model Guide*. [online] England.nhs.uk. Available at: <https://www.england.nhs.uk/publication/the-change-model-guide/> [Accessed 26 October 2021].

England, N., 2021. *NHS England » NHS Equality and Diversity Council*. [online] England.nhs.uk. Available at: <https://www.england.nhs.uk/about/equality/equality-hub/edc/> [Accessed 26 October 2021].

Egbert, L.D., 1963. The Value of the Preoperative Visit by an Anesthetist. *JAMA*, 185(7).

El-Masri, M.M., 2017. Introduction to research sampling. *The Canadian nurse*, 113(1).

Elwyn, G., Scholl, I., Tietbohl, C., Mann, M., Edwards, A.G., Clay, C., Légaré, F., Weijden, T. Van Der, Lewis, C.L., Wexler, R.M. and Frosch, D.L., 2013. *‘Many miles to go.’: A systematic review of the implementation of patient decision support interventions into routine clinical practice*. *BMC Medical Informatics and Decision Making*, .

Epstein, R.M., Fiscella, K., Lesser, C.S. and Stange, K.C., 2010. *Analysis & commentary: Why the nation needs a policy push on patient-centered health care*. *Health Affairs*, .

Epstein, R.M. and Street, R.L., 2011. *The values and value of patient-centered care*. *Annals of Family Medicine*, .

Eriksen, M.B. and Frandsen, T.F., 2018. The impact of patient, intervention, comparison, outcome (Pico) as a search strategy tool on literature search quality: A systematic review. *Journal of the Medical Library Association*, 106(4).

Euromedinfo.eu. 2021. *Resources for Patient Education: Introduction*. [online] Available at: <https://www.euromedinfo.eu/resources-for-patient-education-introduction.html/> [Accessed 21 October 2021].

Faber, J. and Fonseca, L.M., 2014. How sample size influences research outcomes. *Dental Press Journal of Orthodontics*, 19(4).

Ferlay, J., Colombet, M., Soerjomataram, I., Dyba, T., Randi, G., Bettio, M., Gavin, A., Visser, O. and Bray, F., 2018. *Cancer incidence and mortality patterns in Europe: Estimates for 40 countries and 25 major cancers in 2018*. *European Journal of Cancer*, .

Fix, G.M., VanDeusen Lukas, C., Bolton, R.E., Hill, J.N., Mueller, N., LaVela, S.L. and Bokhour, B.G., 2018. Patient-centred care is a way of doing things: How healthcare employees conceptualize patient-centred care. *Health Expectations*, 21(1).

Forbes, E., 2016. A Post-graduate’s Guide to Doing a Literature Review: In Health and Social Care Aveyard Helen Payne Sheila and Pearson Nancy A Post-graduate’s Guide to Doing a Literature Review: In Health and Social Care. *Nurse Researcher*, 23(6).

Fourak, Georgia & Mantzorou, M., 2018. *What are the major ethical issues in conducting research*. Health sciece Journal.

Frampton, S.B., Guastello, S. and Lepore, M., 2013. *Compassion as the foundation of patient-centered care: The importance of compassion in action*. *Journal of Comparative Effectiveness Research*, .

Garcia, J.L.A., 2020. Virtues and Principles in Biomedical Ethics. *Journal of Medicine and Philosophy (United Kingdom)*, 45(4–5).

Ginex, P.K., 2017. The Difference Between Quality Improvement, Evidence-Based Practice, and Research. *ONS Voice*.

Gouin, J.P. and Kiecolt-Glaser, J.K., 2012. *The Impact of Psychological Stress on Wound Healing. Methods and Mechanisms.* *Critical Care Nursing Clinics of North America*, .

Granziera, E., Guglieri, I., Del Bianco, P., Capovilla, E., Dona’, B., Ciccarese, A.A., Kilmartin, D., Manfredi, V. and De Salvo, G.L., 2013. A multidisciplinary approach to improve preoperative understanding and reduce anxiety: A randomised study. *European Journal of Anaesthesiology*, 30(12).

Grocott, M.P.W., Browne, J.P., Van der Meulen, J., Matejowsky, C., Mutch, M., Hamilton, M.A., Levett, D.Z.H., Emberton, M., Haddad, F.S. and Mythen, M.G., 2007. The Postoperative Morbidity Survey was validated and used to describe morbidity after major surgery. *Journal of Clinical Epidemiology*.

Guo, P., East, L. and Arthur, A., 2012. A preoperative education intervention to reduce anxiety and improve recovery among Chinese cardiac patients: A randomized controlled trial. *International Journal of Nursing Studies*, 49(2).

Ha, G.W., Kim, J.H. and Lee, M.R., 2017. Oncologic Impact of Anastomotic Leakage Following Colorectal Cancer Surgery: A Systematic Review and Meta-Analysis. *Annals of Surgical Oncology*.

Hariton, E. and Locascio, J.J., 2018. Randomised controlled trials-the gold standard for effectiveness research HHS Public Access. *BJOG*.

Hayward, J. and Armiger, S.B., 1976. Information???A Prescription Against Pain. *Nursing Research*, 25(5), p.331???385.

Health Education England, 2017a. Advanced Clinical Practice. In: *Advance Clinical Practice*.

Health Education England, 2017b. Multi-professional framework for advanced clinical practice in England. *Health Education England*.

Healy, M.A., Mullard, A.J., Campbell, D.A. and Dimick, J.B., 2016. Hospital and payer costs associated with surgical complications. In: *JAMA Surgery*.

Hellstadius, Y., Lagergren, J., Zylstra, J., Gossage, J., Davies, A., Hultman, C.M., Lagergren, P. and Wikman, A., 2017. Prevalence and predictors of anxiety and depression among esophageal cancer patients prior to surgery. *Diseases of the Esophagus*, 30(8).

Higgins, J.P. and Altman, D.G., 2008. Assessing Risk of Bias in Included Studies. In: *Cochrane Handbook for Systematic Reviews of Interventions: Cochrane Book Series*. John Wiley and Sons.pp.187–241.

Hill, B., 2017. Exploring the development and identity of advanced practice nursing in the UK. *Nursing Management*.

Hoerger, M., Epstein, R.M., Winters, P.C., Fiscella, K., Duberstein, P.R., Gramling, R., Butow, P.N., Mohile, S.G., Kaesberg, P.R., Tang, W., Plumb, S., Walczak, A., Back, A.L., Tancredi, D., Venuti, A., Cipri, C., Escalera, G., Ferro, C., Gaudion, D., Hoh, B., Leatherwood, B., Lewis, L., Robinson, M., Sullivan, P. and Kravitz, R.L., 2013. Values and options in cancer care (VOICE): Study design and rationale for a patient-centered communication and decision-making intervention for physicians, patients with advanced cancer, and their caregivers. *BMC Cancer*, 13.

Hoppe, D.J., Denkers, M., Hoppe, F.M. and Wong, I.H., 2014. The use of video before arthroscopic shoulder surgery to enhance patient recall and satisfaction: A randomized-controlled study. *Journal of Shoulder and Elbow Surgery*, 23(6).

Hróbjartsson, A., Emanuelsson, F., Thomsen, A.S.S., Hilden, J. and Brorson, S., 2014. Bias due to lack of patient blinding in clinical trials. A systematic review of trials randomizing patients to blind and nonblind sub-studies. *International Journal of Epidemiology*, 43(4).

Huber, J., Ihrig, A., Yass, M., Bruckner, T., Peters, T., Huber, C.G., Konyango, B., Lozankovski, N., Stredele, R.J.F., Moll, P., Schneider, M., Pahernik, S. and Hohenfellner, M., 2013. Multimedia support for improving preoperative patient education: A randomized controlled trial using the example of radical prostatectomy. *Annals of Surgical Oncology*, 20(1).

Ilott, I., Booth, A., Rick, J. and Patterson, M., 2010. *How do nurses, midwives and health visitors contribute to protocol-based care? A synthesis of the UK literature*. *International Journal of Nursing Studies*, .

Jacobsen, K.H., 2012. Introduction to Health Research Methods. *Jones & Bartlett*.

Jeon, H.H. and Lee, S.J., 2018. Effects of video-centered nursing education program on anxiety, uncertainty, and self-care among cataract surgery patients. *Korean Journal of Adult Nursing*, 30(5).

Joanna Briggs Institute, 2017. Critical Appraisal Checklist for Analytical Cross Sectional Studies. *Critical appraisal tools*.

Joint Commission on Accreditation of Healthcare Organizations JCAHO, 1997. Joint Commission on Accreditation of Healthcare Organizations. Comprehensive Accreditation Manual for Hospitals: the Official Handbook, Management of the Environment of Care chapter. (Revisions appear in italics and become effective Jan. 1, 1998.). *Joint Commission perspectives. Joint Commission on Accreditation of Healthcare Organizations*, 17(1).

Kalogianni, A., Almpani, P., Vastardis, L., Baltopoulos, G., Charitos, C. and Brokalaki, H., 2016. Can nurse-led preoperative education reduce anxiety and postoperative complications of patients undergoing cardiac surgery? *European Journal of Cardiovascular Nursing*, 15(6).

Kangasniemi, M., Vaismoradi, M., Jasper, M. and Turunen, H., 2013. Ethical issues in patient safety: Implications for nursing management. *Nursing Ethics*, 20(8).

Kaplan, R.M., Chambers, D.A. and Glasgow, R.E., 2014. *Big data and large sample size: A cautionary note on the potential for bias*. *Clinical and Translational Science*.

Kapur, N., 2020. The NHS Long Term Plan. *SUSHRUTA Journal of Health Policy & Opinions*, 12(1), pp.10–11.

Keith, T.Z., 2019. *Multiple regression and beyond: An introduction to multiple regression and structural equation modeling*. *Multiple Regression and Beyond: An Introduction to Multiple Regression and Structural Equation Modeling*.

Kelvered, M., Öhlén, J. and Gustafsson, B.Å., 2012. Operating theatre nurses’ experience of patient-related, intraoperative nursing care. *Scandinavian Journal of Caring Sciences*, 26(3).

Kim, M.J., Oh, H.K., Lee, K.C., Yang, H.H., Koo, B.W., Lee, J., Kim, M.H., Kang, S. Il, Kim, D.W. and Kang, S.B., 2019. *Effects of an Internet-based informational video on preoperative anxiety in patients with colorectal cancer*. *Annals of Surgical Treatment and Research*, .

Kindler, C.H., Harms, C., Amsler, F., Ihde-Scholl, T. and Scheidegger, D., 2000. The visual analog scale allows effective measurement of preoperative anxiety and detection of patients’ anesthetic concerns. *Anesthesia and Analgesia*, 90(3).

Kruzik, N., 2009. Benefits of Preoperative Education for Adult Elective Surgery Patients. *AORN Journal*, 90(3).

Ladha, K.S. and Wijeysundera, D.N., 2019. *Perioperative outcomes: easier to predict but harder to change*. *Canadian Journal of Anesthesia*, .

Ladha, K.S. and Wijeysundera, D.N., 2020. *Role of patient-centred outcomes after hospital discharge: a state-of-the-art review*. *Anaesthesia*, .

Lai, V.K.W., Ho, K.M., Wong, W.T., Leung, P., Gomersall, C.D., Underwood, M.J., Joynt, G.M. and Lee, A., 2020a. 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. *BMJ Quality and Safety*.

Lai, V.K.W., Ho, K.M., Wong, W.T., Leung, P., Gomersall, C.D., Underwood, M.J., Joynt, G.M. and Lee, A., 2020b. 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. *BMJ Quality and Safety*.

Laine, C. and Davidoff, F., 1996. Patient-centered medicine. A professional evolution. *Journal of the American Medical Association*, 275(2).

Lin, S.-Y., Huang, H.-A., Lin, S.-C., Huang, Y.-T., Wang, K.-Y. and Shi, H.-Y., 2016. The effect of an anaesthetic patient information video on perioperative anxiety: A randomised study. *European journal of anaesthesiology*, 33(2).

Luo, J., Xu, H. and Liu, B., 2015. Real world research: A complementary method to establish the effectiveness of acupuncture. *BMC Complementary and Alternative Medicine*, 15(1).

Maxwell, J.A., 2020. Why Qualitative Methods Are Necessary for Generalization. *Qualitative Psychology*.

McCoy, C.C., Englum, B.R., Keenan, J.E., Vaslef, S.N., Shapiro, M.L. and Scarborough, J.E., 2015. Impact of specific postoperative complications on the outcomes of emergency general surgery patients. *Journal of Trauma and Acute Care Surgery*, 78(5).

McDonald, S., Page, M.J., Beringer, K., Wasiak, J. and Sprowson, A., 2014. *Preoperative education for hip or knee replacement*. *Cochrane Database of Systematic Reviews*, .

McGinnis, C.M., Homan, K., Solomon, M., Taylor, J., Staebell, K., Erger, D. and Raut, N., 2019. *Dysphagia: Interprofessional Management, Impact, and Patient-Centered Care*. *Nutrition in Clinical Practice*, .

McGregor, S.L.T., 2020. *Understanding and Evaluating Research: A Critical Guide*. *Understanding and Evaluating Research: A Critical Guide*.

McMillan, S.S., Kendall, E., Sav, A., King, M.A., Whitty, J.A., Kelly, F. and Wheeler, A.J., 2013. *Patient-centered approaches to health care: A systematic review of randomized controlled trials*. *Medical Care Research and Review*, .

McQueenie, R., Ellis, D.A., McConnachie, A., Wilson, P. and Williamson, A.E., 2019. Morbidity, mortality and missed appointments in healthcare: A national retrospective data linkage study. *BMC Medicine*, 17(1).

Melia, K., 2017. *Ethics for Nursing and Healthcare Practice*. *Ethics for Nursing and Healthcare Practice*.

Meterko, M., Wright, S., Lin, H., Lowy, E. and Cleary, P.D., 2010. Mortality among patients with acute myocardial infarction: The influences of patient-centered care and evidence-based medicine. *Health Services Research*, 45(5 PART 1).

de Mik, S.M.L., Stubenrouch, F.E., Balm, R. and Ubbink, D.T., 2018. *Systematic review of shared decision-making in surgery*. *British Journal of Surgery*, .

Mishra, P., Pandey, C., Singh, U., Keshri, A. and Sabaretnam, M., 2019. Selection of appropriate statistical methods for data analysis. *Annals of Cardiac Anaesthesia*, 22(3).

Mitchell, M., 2012. Influence of gender and anaesthesia type on day surgery anxiety. *Journal of Advanced Nursing*, 68(5).

Moher, D., Liberati, A., Tetzlaff, J., Altman, D.G., Altman, D., Antes, G., Atkins, D., Barbour, V., Barrowman, N., Berlin, J.A., Clark, J., Clarke, M., Cook, D., D’Amico, R., Deeks, J.J., Devereaux, P.J., Dickersin, K., Egger, M., Ernst, E., Gøtzsche, P.C., Grimshaw, J., Guyatt, G., Higgins, J., Ioannidis, J.P.A., Kleijnen, J., Lang, T., Magrini, N., McNamee, D., Moja, L., Mulrow, C., Napoli, M., Oxman, A., Pham, B., Rennie, D., Sampson, M., Schulz, K.F., Shekelle, P.G., Tovey, D. and Tugwell, P., 2009. *Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement*. *PLoS Medicine*, .

Moher, D., Liberati, A., Tetzlaff, J., Altman, D.G., Antes, G., Atkins, D., Barbour, V., Barrowman, N., Berlin, J.A., Clark, J., Clarke, M., Cook, D., D’Amico, R., Deeks, J.J., Devereaux, P.J., Dickersin, K., Egger, M., Ernst, E., Gøtzsche, P.C., Grimshaw, J., Guyatt, G., Higgins, J., Ioannidis, J.P.A., Kleijnen, J., Lang, T., Magrini, N., McNamee, D., Moja, L., Mulrow, C., Napoli, M., Oxman, A., Pham, B., Rennie, D., Sampson, M., Schulz, K.F., Shekelle, P.G., Tovey, D. and Tugwell, P., 2014. Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *Revista Espanola de Nutricion Humana y Dietetica*, 18(3).

Moll, S., Mueller, S., Meier, J.K., Reichert, T.E., Ettl, T. and Klingelhöffer, C., 2021. Patients’ quality of life improves after surgical intervention of stage III medication-related osteonecrosis of the jaw. *Oral and Maxillofacial Surgery*, 25(3).

Moule, P eds., 2020. Making Sense of Research in Nursing, Health and Social Care. London: SAGE Publications Ltd.

Mulley, A.G., Trimble, C. and Elwyn, G., 2012. *Stop the silent misdiagnosis: Patients’ preferences matter*. *BMJ (Online)*, .

Mulugeta, H., Ayana, M., Sintayehu, M., Dessie, G. and Zewdu, T., 2018. Preoperative anxiety and associated factors among adult surgical patients in Debre Markos and Felege Hiwot referral hospitals, Northwest Ethiopia. *BMC Anesthesiology*, 18(1).

Munsey, M., Juarez-Alvarado, S., Wells, P. and Sitzer, V., 2021. Maintaining person-centred care in hospitals during restrictions on family presence. *Nursing Management*.

Myles, P.S., Boney, O., Botti, M., Cyna, A.M., Gan, T.J., Jensen, M.P., Kehlet, H., Kurz, A., De Oliveira, G.S., Peyton, P., Sessler, D.I., Tramèr, M.R., Wu, C.L., Grocott, M., Biccard, B., Blazeby, J., Chan, M., Diouf, E., Fleisher, L., Kalkman, C., Moonesinghe, R. and Wijeysundera, D., 2018. *Systematic review and consensus definitions for the Standardised Endpoints in Perioperative Medicine (StEP) initiative: patient comfort*. *British Journal of Anaesthesia*, .

NHS Improvement, 2019. NHS Long Term Plan Implementation Framework . *NHS Improvement* .

NHSI, 2019. *Interim NHS People Plan*. *NHS Improvement*.

NMC, 2018. *The Code Professional standards of practice and behaviour for nurses and midwives Nursing and Midwifery Council*. *London: Nursing & Midwifery Council*.

Oresanya, L.B., Lyons, W.L. and Finlayson, E., 2014. *Preoperative assessment of the older patient: A narrative review*. *JAMA - Journal of the American Medical Association*, .

Paez, A., 2017. Gray literature: An important resource in systematic reviews. *Journal of Evidence-Based Medicine*, 10(3).

Page, M.J., Higgins, J.P.T., Clayton, G., Sterne, J.A.C., Hróbjartsson, A. and Savović, J., 2016. *Empirical evidence of study design biases in randomized trials: Systematic review of meta-epidemiological studies*. *PLoS ONE*, .

Parahoo, K., 2014. *Nursing Research*. 3rd ed. Hampshire: Palgrave Macmillan.

Pati, D. and Lorusso, L.N., 2018. How to Write a Systematic Review of the Literature. *Health Environments Research and Design Journal*, 11(1).

Pelzang, R., 2010. Time to learn: Understanding patient-centred care. *British Journal of Nursing*, 19(14).

Petticrew, M. and Roberts, H., 2008. *Systematic Reviews in the Social Sciences: A Practical Guide*. *Systematic Reviews in the Social Sciences: A Practical Guide*.

Pham, C., Lizarondo, L., Karnon, J., Aromataris, E., Munn, Z., Gibb, C., Fitridge, R. and Maddern, G., 2020. *Strategies for implementing shared decision making in elective surgery by health care practitioners: A systematic review*. *Journal of Evaluation in Clinical Practice*, .

Pinto, P.R., McIntyre, T., Almeida, A. and Araújo-Soares, V., 2012. The mediating role of pain catastrophizing in the relationship between presurgical anxiety and acute postsurgical pain after hysterectomy. *Pain*, 153(1).

Poitras, M.E., Maltais, M.E., Bestard-Denommé, L., Stewart, M. and Fortin, M., 2018. What are the effective elements in patient-centered and multimorbidity care? A scoping review. *BMC Health Services Research*.

Polit, D. and Beck, C., 2018. *Essentials of nursing research: appraising evidence for nursing practice*. *BWolters Kluwer*.

Porter, M.E., 2010. What Is Value in Health Care? *New England Journal of Medicine*, 363(26).

Rajput, S., Tiwari, T. and Chaudhary, A., 2021. Effect of preoperative multimedia based video information on perioperative anxiety and hemodynamic stability in patients undergoing surgery under spinal anesthesia. *Journal of Family Medicine and Primary Care*, 10(1).

Rathert, C., Williams, E.S., Mccaughey, D. and Ishqaidef, G., 2015. Patient perceptions of patient-centred care: Empirical test of a theoretical model. *Health Expectations*, 18(2).

Razjouyan, J., Grewal, G.S., Talal, T.K., Armstrong, D.G., Mills, J.L. and Najafi, B., 2017. Does Physiological Stress Slow Down Wound Healing in Patients with Diabetes? In: *Journal of Diabetes Science and Technology*.

Rcem.ac.uk. 2021. *Consent in Adults, Adolescents and Children in Emergency Departments*. [online] Available at: <https://www.rcem.ac.uk/docs/RCEM%20Guidance/Consent%20guidance%20(revised%20Jan%202018).pdf> [Accessed 26 October 2021].

Rolfe, G., 2014. Understanding advanced nursing practice. *Nursing Times*.

Rousseau, D.M., Manning, J. and Denyer, D., 2011. Evidence in Management and Organizational Science: Assembling the Field’s Full Weight of Scientific Knowledge through Syntheses. *SSRN Electronic Journal*.

Royal College of Nursing, 2018. *Advanced Level Nursing Practice: Royal College of Nursing Standards for Advanced Level Nursing Practice*. *www.rcn.org.uk/ ANP*.

Rucinski, K. and Cook, J.L., 2020. Effects of preoperative opioid education on postoperative opioid use and pain management in orthopaedics: A systematic review. *Journal of Orthopaedics*, 20, pp.154–159.

Ruis, C., Wajer, I.H., Robe, P. and van Zandvoort, M., 2017. Anxiety in the preoperative phase of awake brain tumor surgery. *Clinical Neurology and Neurosurgery*, 157.

Ryan, D.W., 1975. A questionnaire survey of preoperative fears. *British Journal of Clinical Practice*, 29(1).

Sadeghi, T., Nayeri, N.D. and Abbaszadeh, A., 2015. The waiting process: a grounded theory study of families’ experiences of waiting for patients during surgery. *Journal of Research in Nursing*, 20(5).

Salisbury, C., Man, M.S., Bower, P., Guthrie, B., Chaplin, K., Gaunt, D.M., Brookes, S., Fitzpatrick, B., Gardner, C., Hollinghurst, S., Lee, V., McLeod, J., Mann, C., Moffat, K.R. and Mercer, S.W., 2018. Management of multimorbidity using a patient-centred care model: a pragmatic cluster-randomised trial of the 3D approach. *The Lancet*, 392(10141).

Santana, M.J., Manalili, K., Jolley, R.J., Zelinsky, S., Quan, H. and Lu, M., 2018. *How to practice person-centred care: A conceptual framework*. *Health Expectations*, .

Scholl, I., Zill, J.M., Härter, M. and Dirmaier, J., 2014. How do health services researchers understand the concept of patient-centeredness? Results from an expert survey. *Patient Preference and Adherence*, 8.

Schwarzer, R., 2013. *Self-related Cognitions in Anxiety and Motivation*. *Self-related Cognitions in Anxiety and Motivation*.

Shah, A.A., Haider, A.H., Zogg, C.K., Schwartz, D.A., Haut, E.R., Zafar, S.N., Schneider, E.B., Velopulos, C.G., Shafi, S., Zafar, H. and Efron, D.T., 2015. National estimates of predictors of outcomes for emergency general surgery. In: *Journal of Trauma and Acute Care Surgery*.

Siewert, B. and Hochman, M.G., 2015. Improving safety through human factors engineering. *Radiographics*, 35(6).

Sil, A., Kumar, P., Kumar, R. and Das, N., 2019. Selection of control, randomization, blinding, and allocation concealment. *Indian Dermatology Online Journal*, 10(5).

Song, L., Han, X., Zhang, J. and Tang, L., 2020. Body image mediates the effect of stoma status on psychological distress and quality of life in patients with colorectal cancer. *Psycho-Oncology*, 29(4).

Spruce, L., 2013. *Bringing back the basics of perioperative nursing care*. *AORN Journal*, .

Stamenkovic, D.M., Rancic, N.K., Latas, M.B., Neskovic, V., Rondovic, G.M., Wu, J.D. and Cattano, D., 2018. *Preoperative anxiety and implications on postoperative recovery: What can we do to change our history*. *Minerva Anestesiologica*, .

Stewart, M., Brown, J.B., Donner, A., McWhinney, I.R., Oates, J., Weston, W.W. and Jordan, J., 2000. The impact of patient-centered care on outcomes. *Journal of Family Practice*, 49(9).

Stoneham, M., Murray, D. and Foss, N., 2014. *Emergency surgery: The big three - Abdominal aortic aneurysm, laparotomy and hip fracture*. *Anaesthesia*, .

Suresh, K., 2011. *An overview of randomization techniques: An unbiased assessment of outcome in clinical research*. *Journal of Human Reproductive Sciences*, .

Syx, R.L., 2008. *The practice of patient education: The theoretical perspective*. *Orthopaedic Nursing*, .

The Health Foundation. 2009. *Putting patients at the heart of care | The Health Foundation*. [online] Available at: <https://www.health.org.uk/newsletter-feature/putting-patients-at-the-heart-of-care> [Accessed 22 October 2021].

The Royal College of Surgeons of England and Department of Health, 2011. The Higher Risk General Surgical Patient : Towards Improved Care for a Forgotten Group Department of Health on. *London: Royal College of …*.

Vest, J.R., Bolin, J.N., Miller, T.R., Gamm, L.D., Siegrist, T.E. and Martinez, L.E., 2010. *Review: Medical homes: ‘where you stand on definitions depends on where you sit’*. *Medical Care Research and Review*, .

Walburn, J., Vedhara, K., Hankins, M., Rixon, L. and Weinman, J., 2009. *Psychological stress and wound healing in humans: A systematic review and meta-analysis*. *Journal of Psychosomatic Research*, .

Walker, J.A., 2007. *What is the effect of preoperative information on patient satisfaction?* *British journal of nursing (Mark Allen Publishing)*, .

Walls, P., 2015. Understanding Research for Nursing Students Ellis Peter Understanding Research for Nursing Students168pp £16.99 Sage/Learning Matters 9871446267615 144626761X. *Nurse Researcher*.

Weiser, T.G., Haynes, A.B., Molina, G., Lipsitz, S.R., Esquivel, M.M., Uribe-Leitz, T., Fu, R., Azad, T., Chao, T.E., Berry, W.R. and Gawande, A.A., 2016. Size and distribution of the global volume of surgery in 2012. *Bulletin of the World Health Organization*, 94(3).

Williams, J.B., Alexander, K.P., Morin, J.F., Langlois, Y., Noiseux, N., Perrault, L.P., Smolderen, K., Arnold, S. V., Eisenberg, M.J., Pilote, L., Monette, J., Bergman, H., Smith, P.K. and Afilalo, J., 2013. Preoperative anxiety as a predictor of mortality and major morbidity in patients aged >70 years undergoing cardiac surgery. *American Journal of Cardiology*, 111(1).

Williamson, G.G. and Whittaker,A., 2020. *Succeding in Literature Reviews & Research Project Plans for Nursing Students*. California:SAGE Publications.

Wilson, C.J., Mitchelson, A.J., Tzeng, T.H., El-Othmani, M.M., Saleh, J., Vasdev, S., LaMontagne, H.J. and Saleh, K.J., 2016. *Caring for the surgically anxious patient: a review of the interventions and a guide to optimizing surgical outcomes*. *American Journal of Surgery*, .

Wolfe, A., 2001. Institute of Medicine Report: Crossing the Quality Chasm: A New Health Care System for the 21st Century. *Policy, Politics, & Nursing Practice*, 2(3).

Wongkietkachorn, A., Wongkietkachorn, N. and Rhunsiri, P., n.d. Preoperative Needs-Based Education to Reduce Anxiety, Increase Satisfaction, and Decrease Time Spent in Day Surgery: A Randomized Controlled Trial.

Yilmaz, K., 2013. *Comparison of Quantitative and Qualitative Research Traditions*. *European Journal of Education*, .

You, L. ming, Aiken, L.H., Sloane, D.M., Liu, K., He, G. ping, Hu, Y., Jiang, X. lian, Li, X. han, Li, X. mei, Liu, H. ping, Shang, S. mei, Kutney-Lee, A. and Sermeus, W., 2013. Hospital nursing, care quality, and patient satisfaction: Cross-sectional surveys of nurses and patients in hospitals in China and Europe. *International Journal of Nursing Studies*, 50(2).

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