

Supplementary File One

Verification form

Question	Response	
<i>Response to each question must be 'yes' for paper to be included</i>		
Is the paper a randomized controlled trial?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Is the paper nurse-led (is the first or last author a nurse as per listed qualifications)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Is the article published between January 2014 – May 2019?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Is the topic of the paper related to perioperative care at one or more phases (pre-admission; preoperatively; intraoperatively; immediately postoperatively)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Eligible for inclusion?	Yes <input type="checkbox"/>	No <input type="checkbox"/>

Supplementary File Two: Data Extraction Form

Author(s)			
Year of publication		Country of origin	
Primary Aim			
Secondary Aim(s)			
Study population			
Sample size		Study design	
Intervention			
Comparator(s)			
Timing of intervention			
Timing of comparator			
Outcome measurements			
Outcome Assessor		Outcome time points	
Outcome measurement methods			
Findings			
Primary outcome			
Secondary outcome(s)			
Reviewer Comments			
Funding Source			

Supplementary File Three: Table of Included Studies

First author, year	Country	Primary aim	Primary outcome	Secondary outcome/s	Participant age	Surgical Population	Total sample size (n)	Timing of intervention (I) & outcome (O)	Funding
Al-Azawy, 2015	Norway	To compare and evaluate the effect of premedication, standardised preoperative information & anxiety on pain intensity, drug consumption & satisfaction	Pain intensity	Preoperative anxiety on pain intensity and drug consumption	Adults >18yrs	Patients undergoing ablation for atrial fibrillation (AF) under conscious sedation	60	I: Preoperative information, medication 1hr prior to surgery O: Baseline, during and after procedure	Supported by Department of Heart Disease Haukeland University Hospital, Bergen. No specific funding mentioned.
Al-Yateem, 2016	United Arab Emirates (UAE)	To assess play distraction versus premedication	Anxiety (MyPas)	Anxiety (STAIC)	Pediatric: aged 3-8	ASA I-II undergoing elective day surgery under general anesthesia (GA)	168	I: One hour prior to surgery O: During anesthesia, preoperatively, induction, postoperatively, upon discharge.	Funded by a grant from University of Sharjah.
Ayik, 2018	Turkey	To measure effects of lavender oil aromatherapy massage versus usual care	Anxiety (STAI)	Sleep quality	Adults >18yrs	Colorectal surgery	80	I: Preoperatively: night before and morning of surgery O: Preoperatively night before and morning of surgery (after massage/usual care)	No specific grant funding received.
Baker* (clinical trial protocol)	USA	To compare IV versus oral acetaminophen (paracetamol)	Pain	1.Opioid consumption 2.PONV 4.Postoperative respiratory depression	Adults >18yrs	Multiple surgical specialities	120	I: Preoperatively O: Within 24 hours (except patient satisfaction: 2 days postoperatively)	Not stated

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				5.Administration of reversal agents 6. PACU length of stay (LOS) 7.Satisfaction					
Bakhshi 2014	Iran	To assess effects of positioning and early sandbag removal	Back pain	1. Foot pain 2.Haematoma 3.Dorsalis pedis pulse 4.Bleeding	Adults	Post coronary angiography patients	80	I: After catheterization O: 1,2,3, 6hrs postoperatively and the following morning	No statement of funding evident.
Baradaranfar, 2018	Iran	To evaluate impact of warming (forced air versus warmed IV fluids versus control) on physiological indices	Core body temperature	1.Blood pressure 2.Heart rate 3.Shivering	Adults aged 18-65yrs	Laparoscopic cholecystectomy	96	I: From induction of anesthesia until PACU discharge O: Before induction of anesthesia until discharge from PACU	Funding by Isfahan University of Medical Sciences
Brix, 2016	Denmark	To compare two anesthetic techniques	Postoperative pain: NRS	1.Intraoperative fentanyl use 2.Analgesic and antiemetic use in PACU 3.PONV occurrence 4.Time to PACU discharge 5.Recalled worst pain after discharge 6. Recalled PONV after discharge	Adults: females	Ambulatory operative hysterectomy	153	I: Initial surgery O: Immediately postoperatively; two weeks post-discharge	Author has received funding from Family Hede Nielsen Foundation, the Gurli and Hans Engell Friis Foundation, the Aase and Ejnar Danielsens Foundation, and the Health Research Fund of Denmark.
Çakar, 2017	Turkey	To assess preoperative oral carbohydrate vs standard fasting	Preoperative discomfort: hunger; thirst; mouth	1.Postoperative complications; physiological parameters; PONV; pain	Adults; aged 16-80yrs	Thyroidectomy	95	I: From 00.00hrs night before surgery O: 10pm, 6am prior to surgery; every 2 hrs post-surgery	No statement of funding.

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			dryness; chill; headache						
Carlsson, 2018	Sweden	To assess the effectiveness of preoperative visits to the operating theatre on anxiety	Anxiety: m-YPAS	Parental anxiety: STAI	Pediatric, 3-12years and parents.	ENT Day Surgery	57	I: Prior to the day of surgery O: In the waiting room; after arrival to OR, at anesthesia induction. Parents: in waiting room, and once child anaesthetised.	Centre of clinical research in Värmland supporting the project.
Carr, 2015	USA	To compare P6 stimulation versus control on PONV	PONV (Likert Nausea Scale Score)	Nil	Adult females aged 18-67yrs	Laparoscopic cholecystectomy	56	I: Intraoperatively O: on admission to PACU; at 30 and 60 mins, PACU discharge, at home up to 24hrs	No statement of funding.
Charette, 2015	Canada	To assess guided imagery and relaxation combined with education versus usual care	Pain intensity	1.Anxiety (STAI-Y) 2.Coping strategies 3.Regular activities	Adolescents and young adults	Spinal fusion for scoliosis	40	I: Commenced preoperatively O: Day of surgery to 2 weeks post-discharge	Funded by the Canadian Nurses Foundation, the Quebec Inter-university Nursing Intervention Research Group (GRIISIQ), the Quebec Ministry of Education, Recreation and Sports, the Fonds de Recherche du Québec-Santé (FRQS), The Saite Justine Hospital Foundation, the Foundation of Stars and the Gustav

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									Levinschi Foundation.
Chartrand, 2017	Canada	To examine the effect of a preoperative DVD on parental knowledge vs standard care	Parental knowledge	1.Participation 2.Anxiety 3.Children's distress 4.Analgesia 5.Length of recovery	Parent-child dyads: ages 3-10yrs	Elective ENT outpatient or dental surgery	105	I: After pre-assessment clinic appointment O: In the recovery room until discharge from day care surgery.	Study funded by Children's Hospital of Eastern Ontario Research Institute Surgery Associates Research and Development Fund. First author also received Scholarships.
Chen, 2014	USA	To compare CO ₂ versus room air insufflation	Discomfort	Abdominal girth	Adults >18yrs	Screening colonoscopy	98	I: During colonoscopy O: Upon arrival to recovery room; at time of post-anaesthesia recovery (PAR) score of 10 or pre-procedure baseline; when eligible for discharge	No funding received.
Chen, 2015	Taiwan	To assess effects of music versus no music on psychophysiological responses	Psychophysiological parameters (HR; RR; SBP; DBP)	1.Pain (VAS) 2.Opioid dosage	Adults	Elective total knee replacement (TKR)	30	I: Preoperatively; in OT and in PACU O: Preoperatively, in surgical waiting area, in PACU and in postoperative ward	No funding statement.
Chevillon, 2015	USA	To evaluate impact of multifaceted preoperative education vs standard care	Postoperative delirium	1.Anxiety: STAI 2.Knowledge 3.Predictors of delirium 4.Days of mechanical ventilation 5.Intensive care unit (ICU) stay (days)	Adults	Pulmonary thromboendarectomy	129	I: One day prior to surgery O: Intraoperatively (cardiopulmonary indicators); daily for up to 7 days after surgery or until ICU discharge	No funding statement.

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Choi, 2018	South Korea	To compare durations of bed rest and immobilisation (3 groups)	Incidence of post-dural puncture headache (PDPH)	Backache	Adults >18yrs	Elective orthopaedic knee or hip, or bladder surgery, or haemorrhoidectomy under spinal anesthesia	138	I: Post-surgery O: Immediate post-ward transfer then daily for 5 days	No funding statement.
Conway, 2017	Australia	To assess effectiveness of forced air warming vs usual care (passive warming) for hypothermia prevention	Post-procedure temperature	1. Shivering 2. Thermal comfort 3. Major postoperative complications 4. Cardiovascular complications, cardioversion or myocardial infarction	Adults >18yrs	Interventional cardiovascular procedures <30mins duration with sedation	140	I: During procedure O: During procedure; postoperatively; at 30 days (complications)	First author awarded an NHMRC Early Career Fellowship. Study funded by St Vincent's Clinic Foundation Multidisciplinary Patient Focused Research Grant. Equipment provided by Covidien Investigator Sponsored Research Program.
Dehghan, 2017	Iran	To compare dramatic puppet versus therapeutic play versus usual care	Anxiety	Nil	Pediatric: between 6-12	Appendectomy	75	I: Preoperatively: morning of surgery O: Night before surgery; preoperatively before anaesthesia	Supported by Mashhad University of Medical Sciences.
Deitrick, 2015	USA	To compare two doses of IV promethazine (6.25mg versus 12.5mg)	PONV (verbal descriptive scale)	Postoperative sedation (institution's internal sedation scale)	Adults aged 18-75yrs	Ambulatory surgery	120	I: Throughout Phase I and Phase II recovery O: Throughout Phase I and Phase II recovery	Combined AORN/STTI International Small Grant

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Dickinson, 2015	USA	To assess silver impregnated dressings versus dry sterile dressings	Wound healing	Infection	Adults	Cardiac surgery with sternotomy wound	315	I: Incision closure O: 5 days postoperatively and throughout recovery	No funding statement but dressings donated by manufacturers.
Duparc-Alegria, 2018	France	To assess impact of short hypnotic session versus usual care	Postoperative pain: VAS	1.Anxiety level 2.Total morphine consumption	Pediatric: aged over 10yrs, less than 18yrs	Routine major orthopaedic surgery	119	I: Just prior to surgery O: 24hrs postoperatively	Funded by Ministry of Health grant, and sponsored by Assistance-Publique-Hôpitaux de Paris-Direction Recherche Clinique et du Développement.
Erdling, 2015	Sweden	To compare oesophageal and nasopharyngeal temperature in patients receiving prewarming vs no prewarming	Difference in temperature change between devices and warming groups	Effect of prewarming, age and Body Mass Index (BMI) upon measured temperatures (two devices)	Adults	Elective open colorectal surgery under combined anaesthesia	53	I: Preoperatively (prewarming) or intraoperatively O: Before epidural; after test dose; anaesthesia start and then at 30 min intervals	No funding statement.
Ertug, 2017	Turkey	To compare nature sounds vs relaxation exercises vs no intervention	Anxiety	Nil	Adults >18yrs	Elective surgery (under GA)	159	I: Day of surgery O: Day of surgery: recruitment, after intervention, 30 minutes post-intervention	No funding statement.
Fetzer, 2018	USA	To assess effectiveness of pre-emptive preoperative belladonna and opium (B+O) suppository versus routine care	Postoperative bladder comfort (bladder urgency via 5 point Likert scale and pain via 0-10 VAS)	1.Narcotic requirements 2.LOS	Adults	Ureteroscopy	50	I: After anesthesia induction and before insertion of surgical scope O: During PACU at every 15 mins until discharge; outpatient discharge	One author funded by Vermont/New Hampshire Association of Perianesthesia Nurses for cost of study medication

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Franzoi, 2016	Brazil	To compare listening to music versus usual care (toys and television)	Anxiety	1.Heart rate (HR) 2.Systolic blood pressure (SBP) 3.Diastolic blood pressure (DBP) 4.Respiratory rate (RR) 4. Oxygen saturation (SaO ₂)	Pediatric: aged 3-12yrs	Elective surgery under GA	52	I: Day of surgery O: 15 minutes post-intervention	No funding statement.
Fuganti, 2018	Brazil	To evaluate effect of prewarming vs usual care (cotton blankets) on body temperature	Tympanic temperature	1.Air temperature (OT) 2.Humidity (OT)	Adults >18yrs	Elective gynaecological surgery	86	I: Preoperatively O: After prewarming and at 30 minute intervals until end of surgery	No funding statement.
Garcia, 2018	Brazil	To compare therapeutic listening versus standard care	Anxiety	1.Surgical fears 2.Salivary cortisol; 3.HR; 4.RR; 5.SBP; 6.DBP	Adults >18yrs	Surgery for colorectal cancer	50	I: Day of surgery O: Pre-intervention at 2.5hrs, then 1 hour post-procedure	Supported by Conselho Nacional de Desenvolvimento Cientifico e Tecnológico (CNPq), Brazil, grant.
Gomez-Urquiza, 2016	Spain	To compare projection of photos vs photos and music vs usual care	Anxiety	1.HR; 2.RR; 3.DBP; 4.SBP	Adults aged 25-50yrs	ENT surgery	180	I: Day of surgery O: Preoperatively from 45-120minutes prior to surgery	No funding received.
Gross, 2016	USA	To assess outcomes after three different dressing practices	Air leak	1.Patient comfort 2. Skin integrity at incision site	Adults >18yrs	Patients with chest drains	64	I: Following insertion of chest tube in operating room. O: Upon postoperative arrival to Trauma Centre and then daily up until a maximum of 5 days.	No funding statement.
Groton, 2015	USA	To evaluate effectiveness, tolerability	Effectiveness of bowel preparation	1.Tolerability 2.Cost	Adults >18yrs	Outpatient colonoscopy	276	I: Prior to colonoscopy	No funding received.

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		and cost of three bowel preparations (3 groups)						O: During colonoscopy, post-procedure and at follow-up clinic	
Ham, 2017	South Korea	To assess saline solution replacement vs not changing saline solution	Colony forming units (CFU)	Nil	Adults >18yrs	Colectomy for colon cancer	52	I: Intraoperatively: after colon removal (intervention) O: 48hrs post collection	Funded by Konkuk University GLOCAL Campus, Republic of Korea.
Handan, 2018	Turkey	To assess impact of music during caesarean delivery vs usual care	Anxiety: VAS	1.Body temperature 2.Oxygen saturation 3.Respiration rate 4.Heart rate 5. SBP 6. DBP	Females	Cesarean delivery for multiple births	60	I: During surgery O: At the end of surgery	Supported by the Scientific Research Project Fund of Karamanoglu Mehmetbey University.
He, 2015	Singapore	To assess therapeutic care vs standard care (plus information pamphlet)	Anxiety	1.Negative emotional manifestation 2.Postoperative pain	Pediatric: aged 6-14yrs	Inpatient elective surgery	95	I: 3-7days prior to surgery O: Baseline, day of surgery, 24hrs post-surgery	Funded by the National Medical Research Council New Investigator Grant, Ministry of Health, Singapore.
Hoffman, 2017	USA	To assess efficacy of P6 acupressure versus placebo	PONV incidence	N/A	Adults	Planned ambulatory surgery; high risk for PONV	110	I: Preoperatively: 30-60mins pre-induction O: Three recovery phases: Phase 1 (PACU); Phase 2 (pre-discharge); Phase 3 (24hrs post-discharge)	No funding statement.
Kapritsou, 2018	Greece	To compare fast-track conventional recovery protocols	Length of stay	1.Readmission rates 2.Complications 3.Pain: VAS	Adults: 30-82yrs	Hepatectomy	62	I: Immediately after surgery O: Point of discharge	No funding received.
Karunagaran, 2016	India	To assess video-assisted learning vs usual care	Knowledge	1.Anxiety: STAI 2.Physiological & behavioural responses	Adults	Gastroscopy	72	I: Pre-procedure O: 30 mins prior to procedure	College of Nursing, Christian Medical College, Vellore, Tamil Nadu.

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				3.Relationship between knowledge, anxiety and physiological responses					
Kelly, 2017	USA	To assess effectiveness of folded and rolled dry cotton blankets warmed in 130°F or 200°F cabinets	Skin temperature	1.Thermal comfort 2.Safety	Adults >18yrs	Hospital volunteers or employees (healthy volunteers)	20	I: In-vitro (in perioperative setting) O: at regular intervals up to 40mins after blanket application.	No funding statement.
Klintworth * clinical trial protocol	USA	To examine the use of 2% chlorhexidine gluconate cloths preoperatively & daily postoperatively versus standard care	Surgical site infection	1.Serious adverse events 2. Mortality	Adults >18yrs	Colorectal surgery	163	I: Pre & postoperatively up to 4 days O: Up to 30 days postoperatively	No funding statement.
Koenen, 2017	Australia	To compare reflective blankets vs cotton blankets for reduction of core-periphery heat gradient	Preoperative change in foot temperature	1.Normothermia on arrival to PACU 2.Proportion of patients requesting additional warmed blankets	Adults	Elective surgery <1hr duration	328	I: Preoperative holding bay O: On admission and then at regular intervals until before discharge from PACU	Supported by the NSW Health Education and Training Institute (Rural Research Capacity Building Program).
Kose, 2016	Turkey	To assess different hair shaving practices	Surgical site infection (SSI)	Body image	Adults	Elective cranial surgery	200	I: Preoperatively in operating theatre (OT) O: Postoperatively: first; third; fourth; seventh; tenth days	Funded by Gulhane Military Medical Academy Scientific Research Council.
Kurtovic, 2017	Croatia	To compare postoperative analgesic efficacy of intermittent vs PCA paracetamol	Postoperative analgesic efficacy	Nil	Adults aged 27-80	Elective lumbar discectomy of intervertebral disc extrusion at L4-L5	56	I: In OT of completion of surgery to 48hrs post-op; every 6hrs O: In OT of completion of surgery to 48hrs post-op	No funding statement.

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Lee, 2015	Taiwan	To compare postoperative heat-preserving gown versus cotton cloths to reduce duration of hypothermia	Hypothermia duration	1. Cost effectiveness 2. Thermal comfort	Adults	Post-spinal surgery (in PACU)	100	I: PACU O: Postoperatively: on admission to PACU until normothermia achieved	No funding statement.
Lee, 2018	Taiwan	To assess nurse-delivered education with video vs standard care	Anxiety: STAI and cortisol levels	Pain	Adults \geq 20yrs	Lumbar spinal surgery	86	I: Day before surgery O: Day before surgery; 30mins pre-surgery; day after surgery	No funding statement.
Li, 2014	Hong Kong	To assess therapeutic play with dolls versus standard care (preoperative preparation)	Anxiety (STAIC)	1. Parental anxiety 2. Satisfaction (child and parental)	Pediatric: aged 7-12yrs	Elective surgery	108	I: Day of surgery O: Before and after intervention, post procedure	Supported by the Health and Health Services Research Fund, Food and Health Bureau, Hong Kong SAR Government.
Liguori, 2016	Italy	To examine Clickamico app with clown doctors versus standard care (brochure)	Preoperative anxiety (m-YPAS)	Nil	Pediatric: aged 7-12yrs	Elective surgery	40	I: Night prior to procedure O: Afternoon before surgery, day of surgery (on transfer)	Funded by the Department of Health Sciences at the University of Florence, the Meyer Children's Hospital, and the Meyer Foundation.
LoRusso, 2018	USA	To evaluate blood glucose levels of Type II diabetic patients with use of etomidate vs propofol for induction of anesthesia	Perioperative blood glucose	Nil	Adults	Patients with Type II diabetes undergoing surgery	18	I: At induction O: At induction and following emergence from anaesthesia	No funding statement.
Lynch, 2015	USA	To compare room air vs carbon dioxide (CO ₂) insufflation	Pain (intra- and post-operatively): non-verbal	1. Length of recovery 2. Nursing tasks and time	Adults	Routine screening or surveillance colonoscopy	191	I: During procedure O: During and post procedure	No funding received.

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			and verbal pain scale			under moderate sedation			
Ma, 2015	China	To assess three perineal disinfection solutions	Preoperative bacterial count	Nil	Adults or pediatric	Urethral opening surgery		I: Five times a day O: 1 and 2 days post-procedure	No funding statement.
Martin, 2014	USA	To examine the impact of therapeutic suggestion under anesthesia	LOS	1. Anxiety: VAS and Child Rating of Anxiety (CRA) scale 2. Pain (FLACC and Wong Baker FACES scale) 3. Intravenous morphine dosage 4. PONV 5. Emergence delirium 6. Implicit memory	Paediatric: aged 4-8yrs and self-identified primary caregiver	Non-coblation tonsillectomy or adenotonsillectomy	94 child-caregiver pairs	I: Completion of surgery until readiness to wake up in PACU O: postoperatively (PACU)	Funded by ASPAN grant, and an XTO Energy Clinical Scholars Grant
McClurkin, 2016	USA	To assess impact of self-selected music versus music versus no music (usual care)	Anxiety (STAI)	1. Patient satisfaction 2. Relationship between STAI and NVAAS	Adults: 18-75yrs	Day surgery (multiple specialities)	133	I: Preoperatively O: Afternoon prior to surgery, day of surgery (on transfer)	Funded by Baylor St. Luke's Nursing Research Council and the Friends of Nursing.
Mirbagher, 2016	Iran	To assess effects of mentoring vs usual learning activities	Clinical perioperative competence	Nil	Adults	Operating room students	60	I: Over 15 months O: Before and after intervention	No funding statement.
Molloy, 2016	USA	To compare preventative use of dorzolamide-timolol ophthalmic solution with balanced salt solution	Intraocular pressure	Time effects	Adults	Patients scheduled for prolonged steep Trendelenburg procedures	90	I: Following induction of anesthesia O: Baseline, then every 30 minutes during surgery	No funding statement.
Mousavi, 2018	Iran	To assess supportive educational nurse-led interventions vs standard care	Anxiety (STAI)	Sleep (GSQS)	Adults	Elective coronary artery bypass graft (CABG) surgery	160	I: One and two days prior to surgery O: Day of admission, night before surgery	Funded by Tehran University of Medical Sciences.
Munday, 2018	Australia	To compare preoperative warming	Perioperative heat loss	1. Hypothermia	Women >18yrs	Women undergoing	50	I: Preoperatively	Funding by Perioperative

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		plus IV fluid warming versus usual care including IV fluid warming		2. Maternal thermal comfort 3. Mean arterial pressure (MAP) 4. Shivering 5. Agreement between temperature devices 6. Neonatal temperature 7. Apgar score		elective Cesarean delivery with intrathecal morphine		O: Postoperatively up to discharge	Nurses Association of Queensland (PNAQ).
Nieh, 2018	Taiwan	To assess efficacy of forced air warming versus passive insulation on rewarming	Rewarming	Thermal comfort	Adults >20yrs	Laparoscopic thoracic or abdominal surgery over 1hr anesthesia	127	I: During anesthesia until PACU discharge O: Every 30mins intraoperatively and PACU until normothermia achieved	Taichung Veterans General Hospital, Republic of China.
Nilsson, 2014	Sweden	To assess effectiveness of P6 acupressure (with Sea-Band) versus placebo on postoperative nausea	Postoperative nausea	Frequency of vomiting	Adults >18yrs	Elective infratentorial or supratentorial craniotomy	120	I: Applied at the end of surgery O: On arrival to PACU; then at specified intervals until 48hrs postoperatively	Devices partly provided by SeaBand Ltd.; remainder provided by Department of Neurosurgery of Umeå University Hospital. Study supported by hospital's research foundation.
Notte, 2016	USA	To measure effect of Reiki vs usual care on perceived pain	Perceived pain	1. Postoperative analgesic consumption 2. Satisfaction with Reiki 3. Satisfaction with hospital experience	Adults 18-30yrs	Total knee arthroplasty (TKA)	43	I: After admission; after admission to PACU; daily for 3 postoperative days O: Before and after each treatment or at each	Funded by Sharpe/Strumia Research Foundation of Bryn Mawr Hospital.

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								participant/nurse encounter	
Oh, 2017	Korea	To compare effects of transcutaneous electrical nerve stimulation relief band with wrist band with acupressure on Nei-Guan acupuncture point	PONV (Rhodes Index of Nausea, Vomiting and Retching)	Frequency of patient-requested anti-emetics	Adult females aged 16-65yrs	Gynaecology surgery under general anesthesia with patient-controlled analgesia (PCA)	54	I: Prior to anesthesia O: at 0-24hours after PACU discharge	No funding received.
Oliveira, 2016	Brazil	To assess preoperative orientation video vs usual care	Patient knowledge	Nil	Adults ≥18yrs	Cardiac surgery	90	I: Approximately 72hrs prior to surgery O: Post-intervention	Funded by Fundo de Apio à Pesquisa do Instituto de Cardiologia (FAPIC)
Ozlu, 2018	Turkey	To assess the effect of cold application vs no cold application on pain & bleeding	Pain	Bleeding	Adults >18yrs	Septoplasty to correct deviated septum	60	I: In ENT clinic for 15 minutes prior to surgery O: Postoperatively at regular intervals up to 24hrs	No funding received.
Palese, 2015	Italy	To assess postoperative shampooing versus no shampooing	Comfort	1.Surgical site contamination (CFU) 2. Surgical site infection	Adults >18yrs	Elective craniotomy	53	I: Post-procedure O: 30 days post-surgery	No funding statement.
Paris, 2014	USA	To examine effect of various warming methods on maternal body temperature during Cesarean delivery	Maternal core body temperature	1.Maternal hypothermia 2.Estimated blood loss (EBL) 3. Postoperative pain 4. Rescue blanket use 5. Maternal shivering 6.Maternal-newborn bonding 7.First axillary newborn temperature 8. Cord pH	Women	Elective, singleton Cesarean delivery	226	I: Preoperatively until 2hrs post-delivery O: Preoperatively through to fourth postpartum hour.	Medline Industries donated the Warming Pad and temperature sensing Foley catheters.

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				9. Apgar scores (1 & 5mins)					
Piredda, 2016	Italy	To evaluate effectiveness of information booklet alone or with clarification questions vs standard care (3 groups)	Short and long term knowledge regarding totally implantable access ports (TIAPs)	Physiological indicators of anxiety	Adults ≥18yrs	Patients diagnosed with cancer, admitted to day surgery for insertion of totally implantable access port (TIAP)	105	I: In Day Surgery waiting room O: Before TIAP implantation, in waiting room; at 3 months	Funded by Center of Excellence of Nursing Research and Culture, Nursing Professional Board of Rome.
Pool, 2015	USA	To assess raising head of bed (HOB) to 15 degrees vs keeping flat	Patient comfort: pain (VAS)	Nil	Adults	Cardiac angiography	71	I: Post-procedure O: Before procedure; every 15 mins post-procedure	No funding statement.
Pu, 2014	China	To assess feasibility & efficacy of intraoperative underbody warming vs passive warming	Intraoperative hypothermia	1.Temperature decline (via nasopharyngeal temperature) 2.Prothrombin time 3.Activated partial thromboplastin time 4.Thrombin time 5.Complications: in OT and postoperatively 6.Shivering 7.Pain (VAS)	Adults >18yrs	Open and laparoscopic surgery for gastrointestinal tumours	110	I: Intraoperatively O: Primary outcome: from anesthesia induction; every 20 mins until end of procedure. Secondary outcomes: in OT; end of anaesthesia; postoperative day 1	Funded by the Science and Technology Commission of Shanghai Jiao Tong University.
Qvarfordh, 2014	Denmark	To assess mobilization shortly after lumbar disc surgery vs wheeling from PACU to ward	Feasibility	1.Safety 2.Wellbeing: Bournemouth Questionnaire	Adults >18yrs	Elective lumbar discectomy	22	I: One hour postoperatively O: One hour postoperatively	Funded by Glostrup Hospital, the Capital Region of Denmark.
Reynolds, 2015	Australia	To assess BPU, SSD and TA versus usual care	Feasibility	1. Peripheral arterial catheter failure	Adults >18yrs	Surgical patients booked for	123	I: Operating theatre	Funding provided for products by the

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				2. Dislodgement 3. Occlusion 4. Phlebitis 5. Infection: local or CRBSI		postoperative ICU		O: On insertion of arterial catheter in OT; daily in ICU; on ICU discharge	Alliance for Vascular Access Teaching and Research Group (AVATAR) at Griffith University.
Razera, 2016	Brazil	To assess use of educational video versus usual care	Knowledge of informal caregivers	Nil	Unclear: caregivers of children	Informal caregivers of children undergoing primary cheiloplasty and/or palatoplasty	80	I: Postoperatively, on day of discharge (24hrs post-surgery) O: Peri and postoperatively on discharge	PhD scholarship funding by Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP)
Rhodes, 2015	USA	To assess effect of preoperative education and orientation versus no education and orientation	Anxiety	1. Caregiver anxiety 2. Length of stay (LOS) 3. Morphine equivalent use 4. Patient/caregiver satisfaction	Aged 11-21yrs	Posterior spinal fusion (PSF) surgery	65	I: Preoperative O: Two weeks preoperatively, immediately prior to surgery, during surgery, postoperative day 2, on discharge.	No funding statement.
Sáenz-Jalón, 2017	Spain	To assess the limb occlusion pressure technique versus standard pneumatic ischemia technique	Arterial blood pressure	1. Ischemia time 2. Anesthetic incidents: pain, administration of opiates 3. Surgical incidents: interruptions to procedure; bleeding 4. LOS	Adults	Upper limb surgery requiring surgical ischemia and locoregional anesthesia	160	I: Intraoperative O: intraoperatively and postoperatively (LOS)	Funded by Premio Nacional de Investigación de Enfermería Valdecilla del año 2012.
Sahin 2018	Turkey	To evaluate acupressure versus placebo application on P6 acupoint	PONV	1. Postoperative pain severity 2. Analgesic drug requirement 3. Anxiety	Adult (females)	Laparoscopic cholecystectomy		I: One hour prior to surgery O: At 2, 6 and 24hrs postoperatively	No funding received.

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				4. Patient feedback					
Salomon, 2018	USA	To assess preoperative telephone communication by nurse anesthetist vs standard care (face-to-face on morning of surgery)	Anxiety: Amsterdam Preoperative Anxiety (APAIS); STAI Y-1	Nil	Adults	Office-based anesthesia for urological procedures	41	I: Preoperative: night before surgery (intervention) / day of surgery (control) O: Pre and postoperatively	No funding statement.
Simeone, 2017	Italy	To evaluate the efficacy of a nursing educational intervention	Parental anxiety: STAI	Nil	Adults	Parents of children undergoing cardiac surgery for interventricular defect for the first time.	96	I: Preoperatively O: Unclear (stated pre and postoperatively)	No funding statement.
Sites, 2014	USA	To evaluate controlled breathing with peppermint aromatherapy vs controlled breathing alone for PONV relief	PONV	Administration of postoperative anti-emetics	Adults ≥18yrs	Elective laparoscopic, ENT, orthopaedic or urological day surgery under GA with intubation	330	I: Upon initial report of PONV in PACU or Day Surgery O: Postoperatively in PACU or Day Surgery	No funding statement.
Stallings-Welden, 2018	USA	To examine effectiveness of aromatherapy with standard care for PONV	PONV	1.Post discharge nausea and vomiting (PDNV) 2.Risk factors for PONV	Adults >18yrs	Ambulatory surgical patients	221	I: Postoperatively and through discharge O: Postoperatively and after discharge	No funding statement.
Stewart, 2018	USA	To compare tablet-based interactive distraction with oral midazolam	Preoperative anxiety (m YPAS-SF)	1.Emergence delirium 2.PACU LOS 3.Caregiver anxiety (7-point Likert) 4.Caregiver satisfaction (7-point Likert)	Pediatric aged 4-12yrs and caregivers	Outpatient surgery	102 patients (and 102 caregivers)	I: Pre-induction O: On admission; parental separation; mask induction and then on emergence.	Funded by West Coast University

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Su, 2018	Taiwan	To assess efficacy of forced air warming versus passive insulation	Perioperative hypothermia	1.Shivering 2.Pain 3.Blood loss 4.Adverse cardiac events	Adults >20yrs	Laparoscopic thoracic or abdominal surgery	124	I: During anesthesia, intraoperatively until end of PACU O: Every 30mins intraoperatively and in PACU until normothermia achieved	Taichung Veterans General Hospital, Republic of China.
Tsai 2017	Taiwan	To assess effectiveness of three antiseptic handwashing methods amongst surgical staff.	CFU counts	Time for hand cleansing	Adults	Practicing surgeons and scrub nurses with experience of conventional surgical and waterless hand rub OT protocols		I: Immediately preoperatively O: Before and after surgical hand disinfection, immediately after operation	Funded by Taipei Medical University, Shuang Ho Hospital
Ugras, 2018	Turkey	To assess different types of music vs no music (3 groups)	Preoperative anxiety: STAI	1.SBP 2.DBP 3.Heart rate 4.Cortisol levels	Adults	Surgical otorhinolaryngology patients	180	I: Music for 30mins pre-procedure O: At completion of intervention	No funding received.
Ullan, 2014	Spain	To assess effect of play vs usual care	Post-surgical pain: FLACC	Nil	Paediatric: ages 1-7	Elective surgery	95	I: During hospital stay O: Each hour postoperatively; commencing when consciousness regained	Funded by The Council of Education of the Junta of Castilla and Leon Spain, and the Spanish Ministry of Education.
Unulu, 2018	Turkey	To assess effectiveness of P6 acupuncture	Nausea intensity	1.Patient information 2.Anxiety 3. Perianesthesia comfort 4.General comfort	Adults	Gynaecologic (not obstetric) surgery		I: Within 12 hours after procedure O: Postoperatively: 0-2; 2-6; 6-12; 12-24 and 24-48hrs	No funding statement.

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Webster, 2014	Australia	To assess consumption of carbohydrate fluids vs usual care	Time to readiness to discharge	1.Time to first flatus 2.Time to first bowel movement 3.Mortality (from any cause during trial) 4.Adverse outcomes	Adults ≥ 18 yrs	Elective bowel surgery	46	I: From 19.00 the night prior to surgery O: Postoperatively	No funding statement.
Wilson, 2016	Canada	To assess individualised education prevention	Nausea	1.Pain 2. Analgesic and anti-emetic administration	Adults	Total knee replacement surgery		I: Preoperatively O: Postoperatively day 3	Partially funded by the Kingston General Hospital Women's Auxiliary Millennium Fund.
Wistrand, 2016	Sweden	To compare preheated and room temperature skin disinfectant solution	Skin temperature	Patients' experience	Adults >18 yrs	Patients undergoing pacemaker, implantable cardioverter-defibrillator or cardiac resynchronisation therapy under local anaesthesia	220	I: OT (immediately prior to procedure) O: Before and after skin disinfection (in OT)	Funded by research council of Örebro County Council.
Wu, 2019	China	To assess safety and feasibility of early oral hydration in PACU	PONV	1.Thirst 2.Incidence of oropharyngeal discomfort 3.Patient satisfaction	Adults	Elective laparoscopic cholecystectomy	1735	I: Postoperatively (PACU) O: Postoperatively up to day 1	Funded by the Sichuan Provincial Health Department.
Zaman, 2018	Iran	To assess effect of warm versus room temperature IV fluids	Shivering	1.Core temperature 2.Oxygen saturation 3.Vital signs	Adults	Elective abdominal surgery	70	I: Intraoperatively O: Postoperatively: on admission to PACU and at 30 mins in PACU	No funding statement.

List of Abbreviations used in table:

APAIS: Amsterdam Preoperative Anxiety and Information Scale

AORN: Association of periOperative Registered Nurses

ASA: American Society of Anesthesiologists

ASPAN: American Society of PeriAnesthesia Nurses

BPU: Bordered Polyurethane

CO₂: Carbon Dioxide

CRBSI: Catheter-related bloodstream infection

DBP: diastolic blood pressure

ENT: Ear, nose and throat

FLACC: Faces, Legs, Activity, Cry, Consolability Scale

GSQS: Groningen's Sleep Quality Scale

HR: heart rate

IV: intravenous

LOS: length of stay

MAP: mean arterial pressure

mYPas: modified Yale Preoperative Anxiety Scale

mYPAS-SF: modified Yale Preoperative Anxiety Scale Short Form

NHMRC: National Health and Medical Research Council

NRS: Numerical Visual Anxiety Scale

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NVAAS: Numerical Visual Analog Anxiety Scale

OT: operating theatre

P6: pericardium 6

PACU: Post Anesthetic Care Unit

PCA: patient-controlled analgesia

PONV: Post-Operative Nausea and Vomiting

RR: respiratory rate

SBP: systolic blood pressure

SSD: sutureless securement device

STAI: State-Trait Anxiety Inventory

STAIC: State-Trait Anxiety Inventory for Children

STAI-Y: State-Trait Anxiety Inventory (Form Y)

STTI: Sigma Theta Tau International

TA: tissue adhesive

VAS: Visual Analog Scale

Y-PAS: Yale Preoperative Anxiety Scale