

# PATIENT-RELATED INTERVENTIONS TO IMPROVE PATIENT SAFETY: AN UMBRELLA REVIEW OF NON-CLINICAL INTERVENTIONS IN THE PERIOPERATIVE CARE PROCESS

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Topic: Patient Safety and Quality Improvement

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## INTRODUCTION

- Approximately 10% of all patients admitted to hospitals experience adverse events<sup>1</sup> and perioperative care is one of the most reported fields<sup>2</sup>.
- Adverse events have been found to cause patient complications and increased costs, highlighting the need for multiple types of interventions<sup>3</sup>.
- We defined patient safety as the prevention of errors and adverse effects (e.g. undesired effects of a drug or other type of treatment, such as surgery) to patients.
- Non-clinical patient-safety interventions are described as interventions, strategies, practices, behaviour, actions, procedures, or structures which are aimed at improving safety.

## AIM

To describe non-clinical specific patient-related interventions to improve patient safety practices in the perioperative care process.

## METHOD

- This study is part of a bigger umbrella review aiming to identify and assess the quality of non-clinical specific interventions to improve patient safety practices in the perioperative care process.
- We followed Aromataris et al.<sup>4</sup> methodology guidance for umbrella reviews.
- PubMed, Scopus, CINAHL, PsycINFO, and Cochrane databases were searched for quantitative systematic reviews and meta-analyses on interventions to improve adult patients' safety in the perioperative care process.
- The inclusion criteria were:
  - published between 2012-2022
  - Involved one or more surgical sub-specialities
  - Adult patients
  - We did not restrict language
- The selection was carried out independently by two researchers. Disagreement was solved by discussion with the team.
- Two researchers independently extracted the data and evaluated the quality of studies with the JBI Critical Appraisal Checklist for Systematic Reviews and Research Synthesis<sup>4</sup>.
- The review protocol has been registered in PROSPERO (protocol number CRD42023397419).

## RESULTS

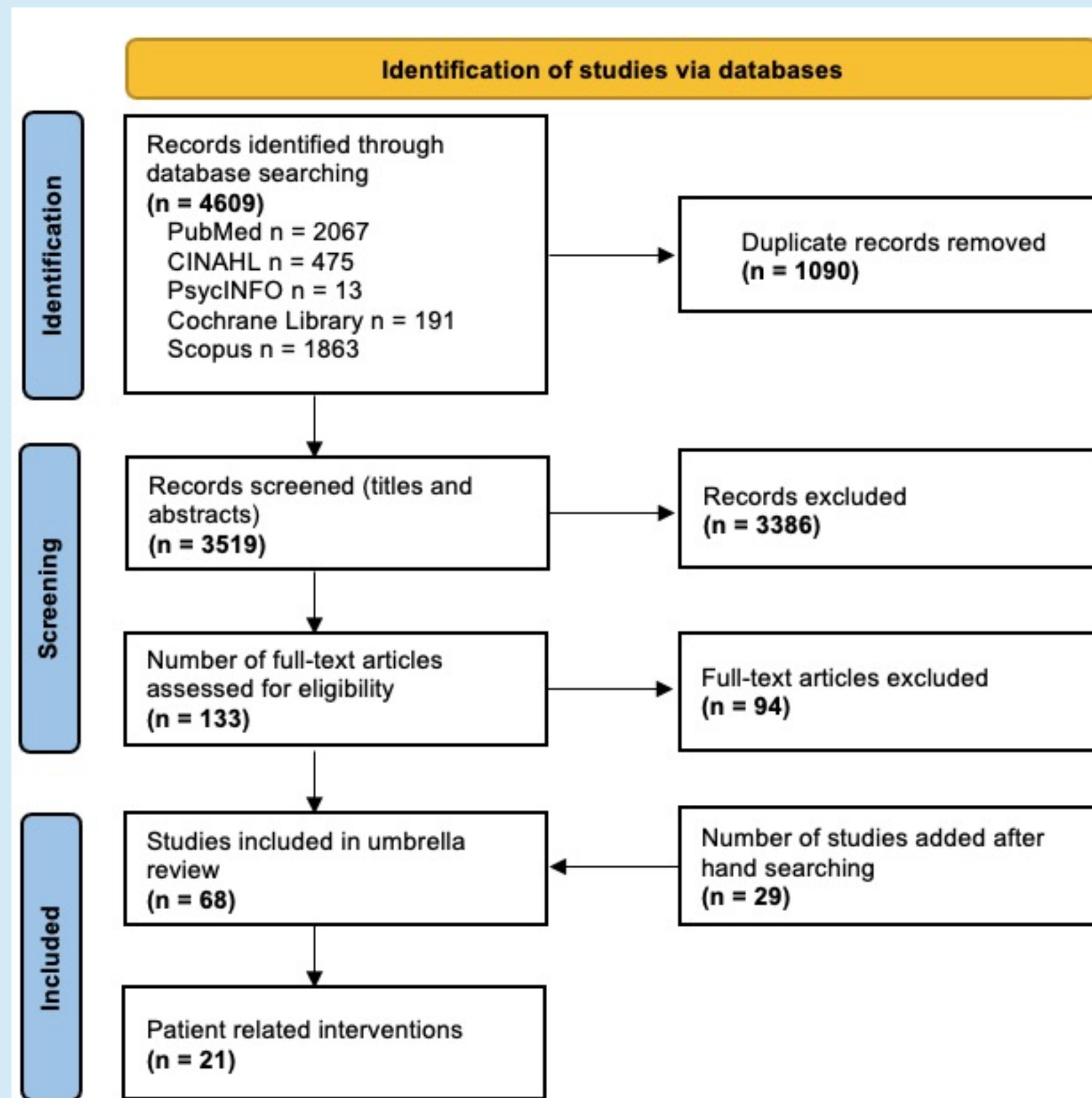


Figure 1. Study selection flow diagram

Altogether 68 systematic reviews and meta-analyses were included in the umbrella review, of which 21 concerned patient-related interventions (Figure 1). Included studies were published between 2012-2022, and the methodological quality was considered moderate to high. A wide range of different surgical fields was represented, including orthopaedics, oncology, general surgery, gynaecology, cardiothoracic, ophthalmology and otorhinolaryngology surgery. Interventions were found for the entire perioperative period (Figure 2).

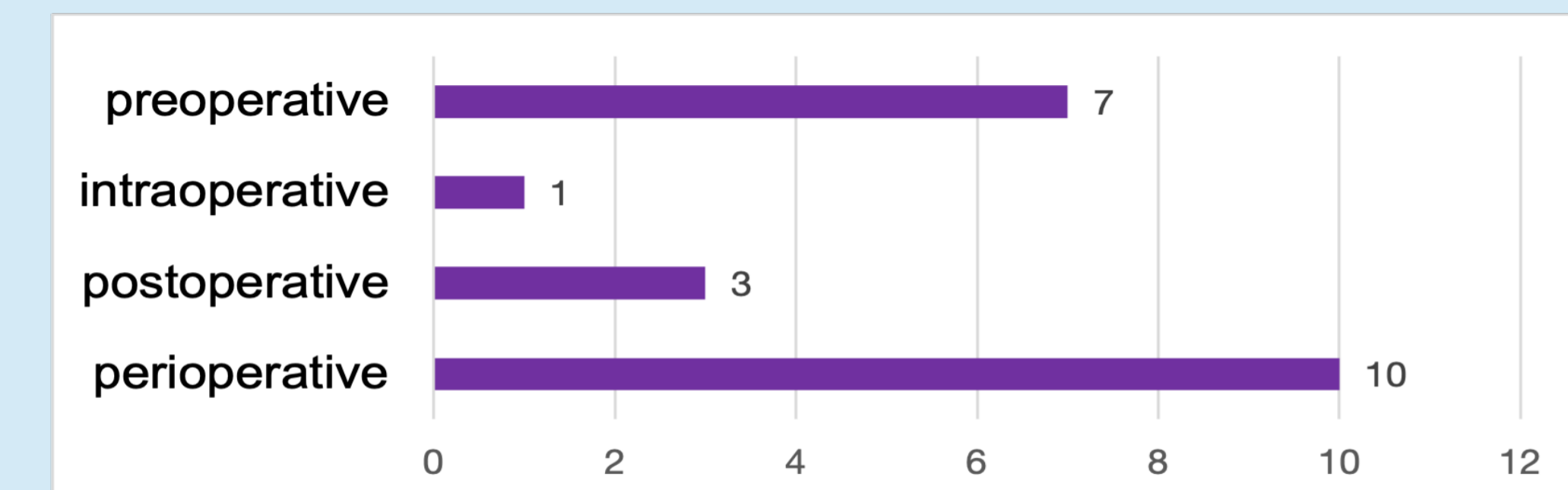


Figure 2. Number of included papers by perioperative phase

Patient-related interventions focused on subjects like using music, patient education, psychosocial techniques, and patient lifestyle choices (Table 1).

Table 1. Identified patient-related interventions to improve patient safety in perioperative care process

| INTERVENTION                   | PATIENT OUTCOME                                          | EFFECT                                                                                                                                   |
|--------------------------------|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Music                          | Pain                                                     | Significant effect <sup>1,2,3,4</sup><br>No significant effect <sup>5</sup><br>Not reported / only qualitative analysis <sup>6,7,8</sup> |
|                                | Anxiety                                                  | Significant effect <sup>2,3,4,9,10</sup><br>Not reported / only qualitative analysis <sup>6,7,8</sup>                                    |
|                                | Wound healing and infection                              | No significant effect <sup>10</sup>                                                                                                      |
|                                | Postoperative analgesic requirement                      | Significant effect <sup>3,11</sup>                                                                                                       |
|                                | Intraoperative sedative requirement                      | Significant effect <sup>11</sup>                                                                                                         |
|                                | Hospital length of stay                                  | No significant effect <sup>2,3,11</sup>                                                                                                  |
|                                | Postoperative delirium                                   | Not reported / only qualitative analysis <sup>6</sup>                                                                                    |
|                                | Patient satisfaction                                     | Significant effect <sup>3</sup>                                                                                                          |
| Patient education              | Preoperative anxiety                                     | Significant effect <sup>12</sup>                                                                                                         |
|                                | Pain, physical function, quality of life, adverse events | No significant effect <sup>12</sup>                                                                                                      |
|                                | Objective knowledge                                      | Not reported / only qualitative analysis <sup>13</sup>                                                                                   |
| Psychosocial techniques        | Pain                                                     | Significant effect <sup>14</sup>                                                                                                         |
|                                | Anxiety                                                  | Significant effect <sup>14</sup>                                                                                                         |
|                                | Improved recovery                                        | Significant effect <sup>14</sup>                                                                                                         |
|                                | Postoperative analgesic requirement, quality of life     | No significant effect <sup>14</sup>                                                                                                      |
| Preoperative smoking cessation | Any postoperative complication                           | Significant effect <sup>15</sup>                                                                                                         |
|                                | Wound complications                                      | Significant effect <sup>15</sup>                                                                                                         |
| Preoperative alcohol cessation | Postoperative complications                              | Significant effect <sup>16</sup>                                                                                                         |
|                                | In-hospital mortality, 30-day mortality                  | No significant effect <sup>16</sup>                                                                                                      |
| Timely informing               | Anxiety, pain, hospital length of stay                   | No significant effect <sup>17</sup>                                                                                                      |
| Massage therapy                | Pain                                                     | Significant effect <sup>18</sup>                                                                                                         |
| Aromatherapy                   | Anxiety                                                  | Significant effect <sup>19</sup>                                                                                                         |
| Mental simulation              | Pain                                                     | Significant effect <sup>20</sup>                                                                                                         |
|                                | Pain                                                     | Significant effect <sup>21</sup>                                                                                                         |
|                                | Hospital length of stay                                  | Significant effect <sup>21</sup>                                                                                                         |
|                                | Negative affect                                          | Significant effect <sup>21</sup>                                                                                                         |

<sup>1</sup>Dale et al. 2021, <sup>2</sup>Lin et al. 2020, <sup>3</sup>Hale et al. 2015, <sup>4</sup>Kühmann et al. 2018, <sup>5</sup>Yu et al. 2020, <sup>6</sup>Sibanda et al. 2019, <sup>7</sup>Song et al. 2018, <sup>8</sup>Vetter et al. 2015, <sup>9</sup>Weingarten et al. 2021, <sup>10</sup>Bradt et al. 2013, <sup>11</sup>Fu et al. 2020, <sup>12</sup>McDonald et al. 2014, <sup>13</sup>Ronco et al. 2012, <sup>14</sup>Szevenyi et al. 2018, <sup>15</sup>Thomsen et al. 2014, <sup>16</sup>Oppedal et al. 2012, <sup>17</sup>Hounsoms et al. 2017, <sup>18</sup>Kukimoto et al. 2017, <sup>19</sup>Liu et al. 2022, <sup>20</sup>Lee et al. 2022, <sup>21</sup>Powell et al. 2016

## CONCLUSIONS

- The number of systematic reviews found reflects the importance of the topic.
- Patient-focused interventions must be seen alongside other non-clinical interventions as a crucial contribution to the improvement of patient safety in the perioperative care process.

## ACKNOWLEDGEMENT

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