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Health Management Abstracts

Contents

Anesthetic agents as a treatment for mental health disorders: a scoping review

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INTRODUCTION

Mental health disorders are a leading cause of global disability.[1] Existing pharmacologic therapies are limited by delayed onset, side effects, and inconsistent efficacy.[2] Anesthetic agents such as nitrous oxide, dexmedetomidine, and propofol have shown promise as therapeutic interventions for mental health disorders such as treatment-resistant depression, anxiety, and schizophrenia.[3–5] However, most existing research reports their effects following surgical procedures. This leaves a critical gap in understanding the direct therapeutic effects of anesthetic agents on mental health disorders in patients who are not concurrently receiving other clinical interventions. This scoping review aims to comprehensively examine the evidence on a diverse spectrum of anesthetic agents as treatments for mental health disorders, summarizing the literature about their efficacy, safety, and potential, while identifying trends and gaps to inform future research.

METHODS

A systematic search was conducted across six databases (MEDLINE, MEDLINE In-Process/ePubs, Embase, CENTRAL, CDSR, APA PsycINFO) and two trial registries (ClinicalTrials.gov and WHO ICTRP) from inception to 20 April 2024. The search strategy included a broad range of anesthetic agents and mental health conditions. The multi-step screening process aimed to include only original research studies on adult populations (≥ 18 yr) treated with anesthetic agents for the primary purpose of alleviating psychiatric symptoms. Studies of ketamine were excluded since the antidepressant effects of ketamine have been extensively reviewed in recent years. Data extracted from each article included study characteristics, population demographics, anesthetic treatment protocols, control/placebo details, efficacy outcomes, adverse events, and study limitations. A narrative synthesis summarizing the data on efficacy and safety was compiled for

each combination of anesthetic agents and mental health disorders. Descriptive analysis of the data was also completed to examine trends and knowledge gaps.

RESULTS

Among 9,999 identified studies, 82 articles (*n* = 7,523) met the eligibility criteria. Depressive disorders were the most commonly studied (*n* = 32), followed by anxiety disorders (*n* = 24), schizophrenia-spectrum disorders (*n* = 18), bipolar disorders (*n* = 9), phobic disorders (*n* = 6), obsessive-compulsive disorders (OCD, *n* = 3), posttraumatic stress disorders (PTSD, *n* = 2) and suicidal ideation (*n* = 2). Barbiturates were the most commonly studied anesthetic agents (*n* = 44), followed by nitrous oxide (*n* = 21), dexmedetomidine (*n* = 12), propofol (*n* = 8), and fluranes (*n* = 7). Nearly half (47.6%) of articles were published before the year 2000. Of the included studies, 50% were completed randomized controlled trials (RCTs), 17.1% clinical trial protocols, 13.4% case reports, 9.8% unspecified interventional trials, 4.9% case series, and 2.4% each for cohort and retrospective studies. Most of the studies came from the USA (*n* = 48), followed by the UK (*n* = 9), and China (*n* = 8).

DISCUSSION

This scoping review synthesizes the literature about the therapeutic effects of anesthetic agents for mental health disorders. Studies about depressive disorders dominate the literature, while OCD, PTSD, and bipolar disorders remain relatively understudied. Barbiturates were historically the most studied anesthetics, while recent and ongoing trials have highlighted nitrous oxide's antidepressant potential. Many studies reported benefits for various anesthetics, but their validity was frequently challenged by non-randomized designs, small sample sizes, or unreported statistical tests. To generate more convincing evidence of efficacy and justification for clinical use, more methodologically rigorous RCTs including appropriate control groups and sufficient sample sizes are needed.

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Establishing a patient advisory council for anesthesia research: a model for effective patient engagement

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INTRODUCTION

The meaningful and active involvement of patient voices as partners in the research process ensures that research questions, designs, and interpretations are guided by patient perspectives and priorities.[1] Despite the growing emphasis on patient engagement in research across various health disciplines, integrating patient partners into anesthesia research can be challenging due to the nature of anesthesia practice and lack of formalized structures to engage with patients. In this project, we aimed to design and implement a tailored and longitudinal Patient Advisory Council (PAC), composed of patient partners with relevant lived experiences, to support our research program by providing ongoing input and feedback on research projects.

METHODS

This project involved two components: 1) formalization of the PAC structure and materials; 2) initial recruitment of patient partners. As a program improvement project, this project did not require ethical approval. We formalized the PAC structure, defined mutual responsibilities, and created resources to facilitate the onboarding process. Eligible patient partners were identified as residents of British Columbia with surgical experience within the past two years (either personally or as a family member or caregiver). We sought broad representation by type of surgery (e.g., cardiac, orthopedic, obstetric, etc.), geographic location (rural *vs* urban), age, gender identity, and other demographic factors to ensure a diversity of voices.

We employed a multi-faceted recruitment strategy to maximize reach. We posted online applications on platforms such as Patient Voices Network, Reach BC, iVolunteer through United Way, social media, and university hiring sites (UBC, SFU, UVic, CapU, Langara). Physical flyers were posted in the hospital waiting room areas near the pre-admission clinic and operating room. Interested individuals were onboarded through virtual interviews, during which the onboarding documents, patient's medical history, and mutual expectations were reviewed.

RESULTS

The establishment of the PAC was successful, with the creation of living documents to define its structure. During a 4-week recruitment period, we onboarded 30 patient partners from 49 applications (7 applicants were lost to follow-up, 4 were ineligible, 4 withdrew, and 4 declined participation). Most patient partners were recruited through the Reach BC platform (23/30). Onboarded patient partners identified as cisgender female (19/30), cisgender male (8/30), non-binary (2/30), or transgender male (1/30); none identified as transgender female. Ages ranged from 21 to 80 yr, with at least one patient partner onboarded from each major health authority in British Columbia. Patient partners were recruited with diverse surgical experiences, the most common being general surgery (17), obstetric procedures (11), and cardiac surgery (10), among others.

Key outcomes of our project include the development of onboarding documents, recruitment posters/posts, glossary of terms, and an agreement/consent form, which may serve as models for other research groups undertaking similar initiatives.

DISCUSSION

The formation of our PAC has established a structured and consistent approach to integrating patient perspectives into anesthesia research. This initiative will support our research process to facilitate the integration of patient voices in a timely manner for new research projects.

Our PAC structure will require ongoing iteration and evolution through input from our stakeholders. In future recruitment efforts, expanding the diversity of experiences and backgrounds among patient partners will remain a priority.

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