

Introduction

- Ketamine was first introduced to the world of anesthesia in 1966
- Ketamine is **an effective analgesic and anesthetic** derived from phencyclidine
- Research reinforces that ketamine is not only a safe and effective anesthetic and analgesic, but there may also be more uses for this drug than previously believed.
- Despite its proven efficacy and utility, many anesthesia providers rarely use it.
- Reasoning for gap in research to practice:
 - Side effect profile
 - Lack of training
 - Lack of awareness on its wide variety and indications for use

Background

- Ketamine has developed a stigma around itself that has caused anesthesia providers to be very hesitant or biased against its utility, despite research positively recommending its use (Kurdi et al., 2014).
- **61.4%** of anesthesia providers surveyed cited **side effect profile as the restriction** to the drug being more mainstream.
- Side effects are **rare when a benzodiazepine or hypnotic agent are concomitantly given**
- Ketamine can be used to combat the current opioid epidemic due to its analgesic properties that result from its antagonism of the NMDA receptor.
- Ketamine is potentially useful for patients with chronic pain.
- Ketamine may serve as the prototype for a new class of antidepressants, which is able to produce a rapid reduction in severe depressive symptoms or treat those with treatment resistant depression.


Literature Review

- **Reduction in post operative opioid use**
- **Avoidance of Psychomimetic events**
- **Decreased alteration in immune response**
- **Neurological benefits**
- **Safe use in septic population**

Methodology

- Sample/Population**
- CRNA/SRNA of a state affiliated nurse anesthesia association
- Intervention**
- Provide the state affiliated nurse anesthesia association membership a survey asking about their attitudes towards ketamine
 - Introduce an easily accessible ketamine toolkit to increase its use among providers
- Data Collection**
- Survey was made available from July 2020-September 21st 2020.
 - Survey was published on Qualtrics for ease of access and data collection
- Problem Statement**
- Emerging literature supports a variety of beneficial uses of ketamine for special populations. Omission of the use of ketamine maybe to the detriment of patients requiring anesthesia and a lack of education and training provided to anesthesia providers maybe a causative factor.
- **Would a gap analysis on ketamine usage among the membership of a state affiliated nurse anesthesia association demonstrate an effective means for developing an educational workshop and readily accessible toolkit?**

Survey



Ketamine Gap Analysis and Toolkit Development to Increase its Use by Anesthesia Providers in the Perioperative Setting

Pre-Intervention Survey	
Are you a CRNA or SRNA?	CRNA/SRNA CRNA
What region of NJ do you primarily practice?	<input type="radio"/> Northern New Jersey <input type="radio"/> Central New Jersey <input type="radio"/> Southern New Jersey
What is your primary practice setting?	<input type="radio"/> Hospital <input type="radio"/> Ambulatory Surgery Center <input type="radio"/> Office Based <input type="radio"/> Endoscopy Center <input type="radio"/> Pain Management Clinic <input type="radio"/> Other: _____
Are you currently working in the clinical setting?	Yes No
Indicate the number of years of experience you have in clinical practice.	<input type="radio"/> Less than 1 year <input type="radio"/> 1-4 years <input type="radio"/> 5-10 years <input type="radio"/> Greater than 10 years <input type="radio"/> Resident/Student in clinical training <input type="radio"/> Resident/Student not in clinical training
1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree	
I feel comfortable with my current knowledge, indications, dosages, benefits and contraindications about the drug ketamine and its uses in the clinical setting?	1 2 3 4 5
I frequently implement ketamine in my anesthetic plan.	1 2 3 4 5
I have used ketamine in the clinical setting, other than for induction of anesthesia. (Subanesthetic doses)	1 2 3 4 5
A ketamine workshop and toolkit will be helpful to increase knowledge, comfortability and frequency of use.	1 2 3 4 5

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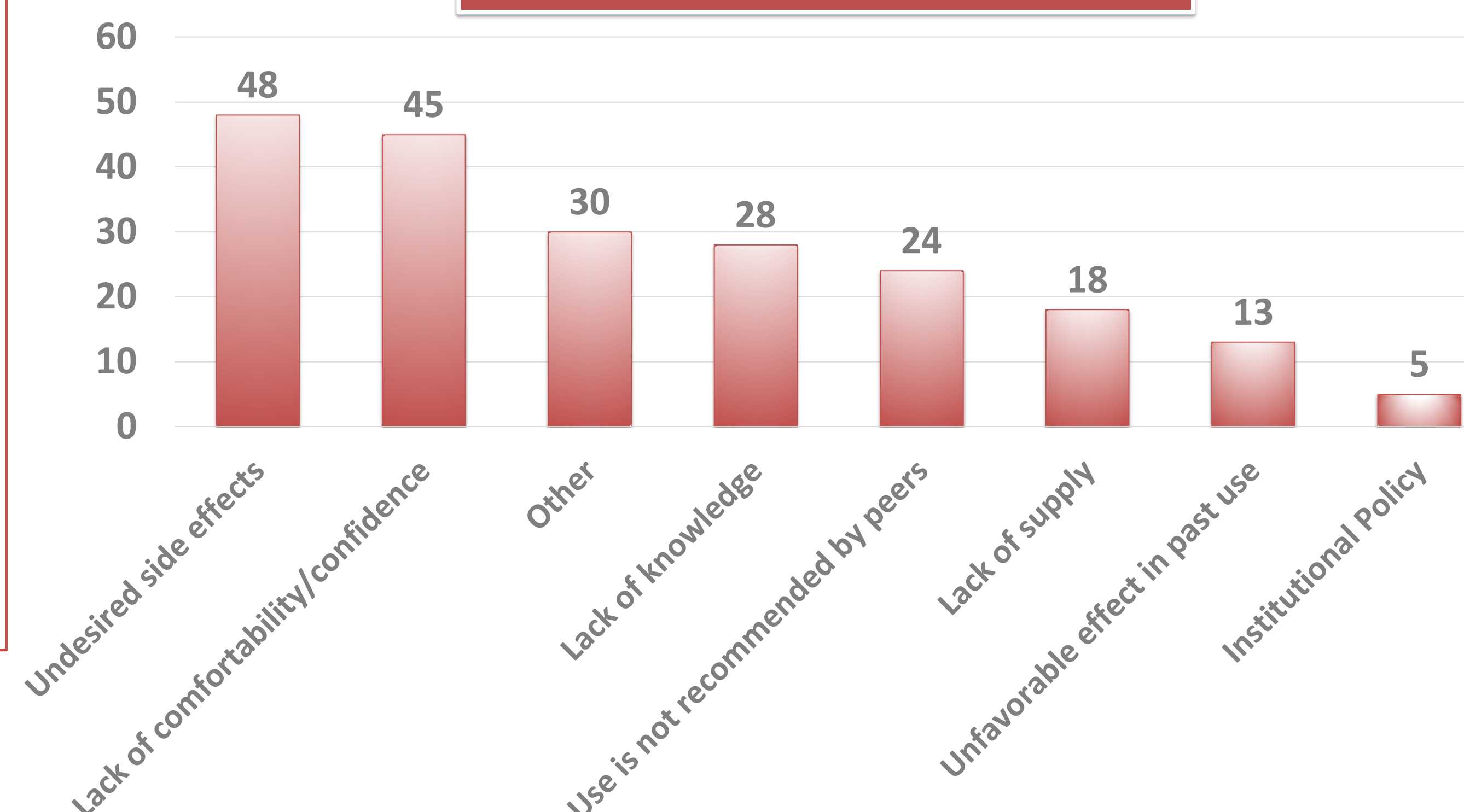
What are the barriers preventing you from utilizing ketamine in your clinical practice? (Select all that apply)	<input type="checkbox"/> Institutional Policy <input type="checkbox"/> Undesired side effects <input type="checkbox"/> Lack of knowledge <input type="checkbox"/> Lack of comfortability/confidence <input type="checkbox"/> Lack of supply <input type="checkbox"/> Use is not recommended by peers <input type="checkbox"/> Unfavorable effect in past use <input type="checkbox"/> Other: _____
What form of delivery of the ketamine toolkit would best suit you to retain knowledge and sustain use of ketamine in the clinical setting?	<input type="checkbox"/> Printable Huddle Buddy <input type="checkbox"/> One-page highlight sheet <input type="checkbox"/> Powerpoint slides <input type="checkbox"/> Infographic <input type="checkbox"/> Other: _____

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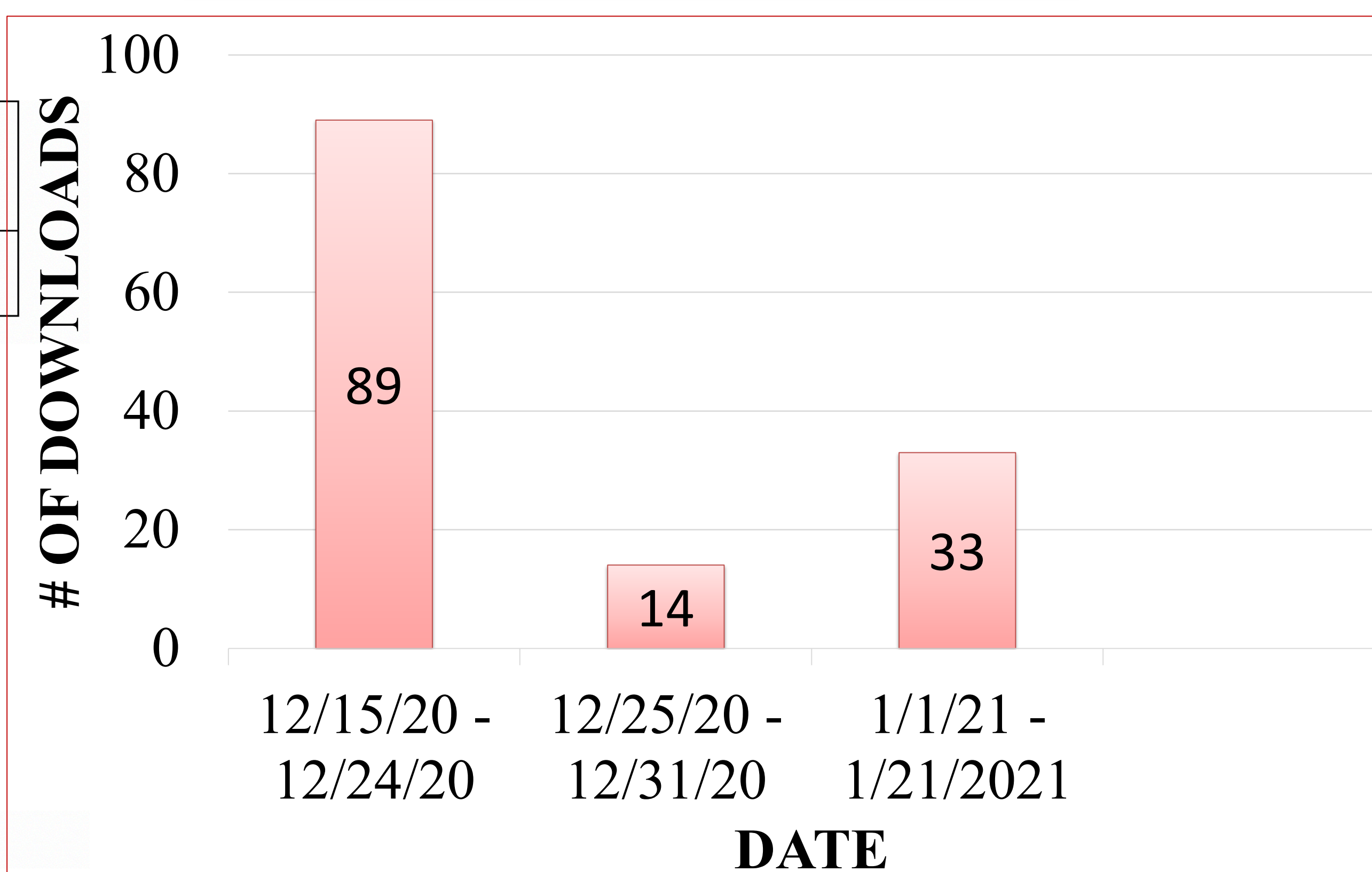
Results

- 137 responses to survey
- 85% were CRNA
- 45% of respondents **STRONGLY AGREED** a ketamine toolkit and workshop will be helpful to increase knowledge/comfortability and frequency of use.
- 46% **AGREED** a one-page highlight sheet would be the most effective form of delivery
- It was seen that there was a strong statistically significant relationship between people's comfort and knowledge of ketamine and how frequently they were to use it p<0.00001.
- There was a relationship between the number of years of practice and the comfort and knowledge of ketamine having a p = 0.001

Barriers to Use



Toolkit Downloads



Discussion

- Ketamine continues to be passed over in favor of other agents. This project has demonstrated that there does appear to be a gap in ketamine use and knowledge among anesthesia providers
- It appears that the introduction of a toolkit may increase ketamine use and comfortability as many providers strongly agreed to the usefulness of this toolkit.
- The toolkit was **accessed a total of 136 times** until January 21, 2021; which demonstrates an interest in acquiring ketamine knowledge and use among the anesthesia providers in the state affiliated nurse anesthesia association.
- The shared interest of ketamine use and knowledge, may lead others to explore its many benefits and even other non-opioid agents to incorporate appropriately into an anesthetic plan.

Contact Information

The authors of this project are Doctor of Nursing Practice (DNP) students. This project is being completed as a DNP Project.

Kevin Joseph- kj338@sn.Rutgers.edu
Steven Schwab-sjs422@sn.Rutgers.edu

Ketamine Toolkit & References QR

