Conscious Sedation Drugs and Combinations Used Among Adults Undergoing Dental Procedures: Patient and Dentist Satisfaction. A Systematic Review and Meta-Analysis

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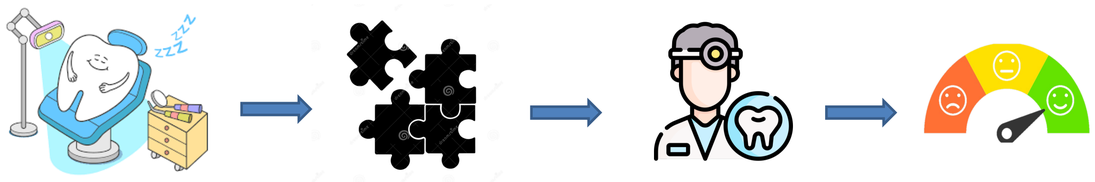
INTRODUCTION

CONSCIOUS SEDATION → DRUG COMBINATIONS → DENTIST SATISFACTION → PATIENT SATISFACTION



The purpose of this Systematic Review is to report the different combinations of conscious sedation drugs and assess which combinations would prove most useful during specific dental procedures, based on patient and surgeon experiences, side effects, and contraindications.

STUDY SELECTION

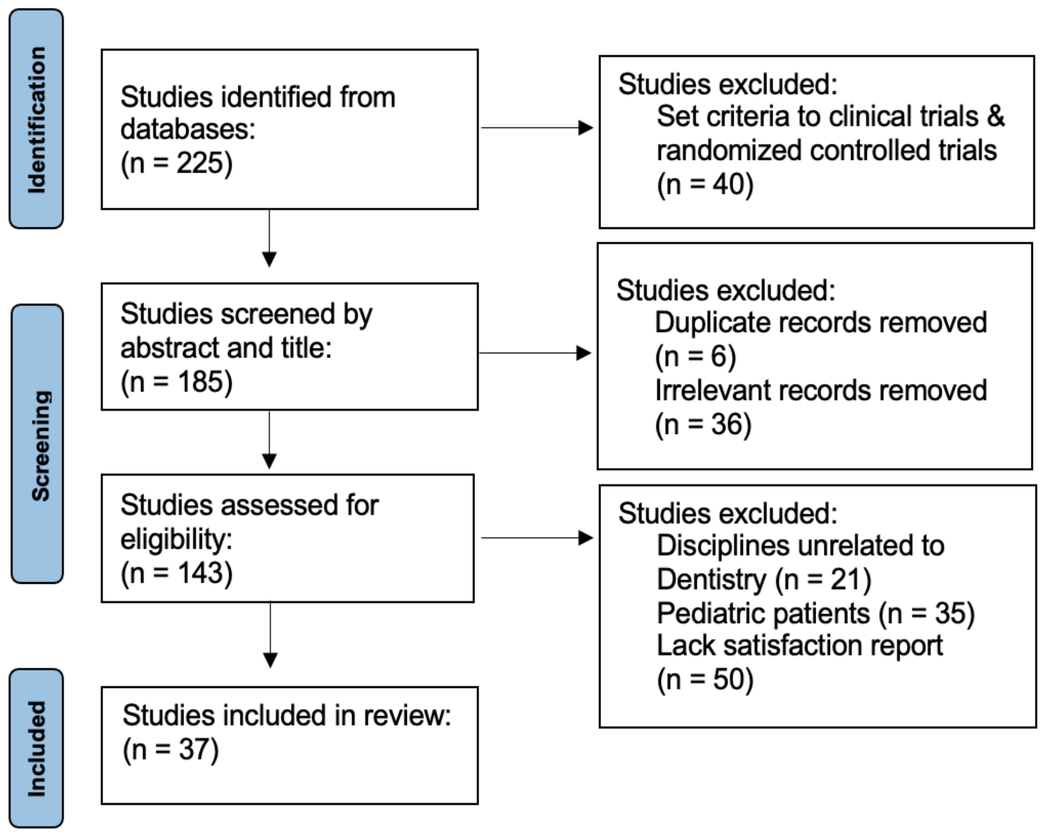
- Studies required to have **patient satisfaction reports**
- Studies required to involve **dental procedures**
- Study subjects required to be **adults** that were **18 years or older**

EXCLUSION CRITERIA

- Studies excluded for involving **pediatric population**
- Studies that **lacked satisfaction reports**
- **Repeated** articles
- Studies that involved **non-dental procedures**

STUDY COLLECTION

PRISM Flow Chart- Database Search Results for Conscious Sedation Drug Combination Indications for Adult Dental Patients Based on Patient and Dentist Satisfaction Reports.



RESULTS & CONCLUSIONS

Conscious Sedation Drug Combination Effects and Indications Based on Patient and Dentist Satisfaction Reports

Drugs and Combinations	High Patient Satisfaction	High Surgeon Satisfaction	Controlled Hemodynamics	Mild sedation	Moderate or Deep sedation	Short procedures	Long Procedures	Quick onset	Amnesic Effect	Anxiolytic Effect	Analgesic Effect
Propofol				✅		✅		✅			
Dexmedetomidine		✅	✅	✅	✅		✅			✅	✅
Midazolam	✅	✅			✅		✅	✅	✅	✅	
Diazepam	✅	✅		✅			✅			✅	
Remifentanil			✅	✅		✅		✅	✅		✅
Fentanyl		✅	✅		✅		✅	✅	✅		✅
Sevoflurane	✅	✅		✅	✅		✅		✅	✅	✅
N_2O	✅	✅		✅		✅	✅	✅	✅	✅	✅
Propofol + Fentanyl + Dexmedetomidine	✅	✅	✅		✅		✅	✅	✅	✅	✅
Propofol + N_2O	✅	✅		✅		✅		✅	✅	✅	✅
Dexmedetomidine + Midazolam	✅	✅	✅		✅		✅	✅	✅	✅	
N_2O + Midazolam + Remifentanil	✅	✅	✅		✅		✅	✅	✅	✅	✅

- The **main conscious sedation drugs** utilized in Dentistry are ***Propofol, Dexmedetomidine, Midazolam, Diazepam, Nitrous Oxide, Sevoflurane, Remifentanil*** and ***Fentanyl***.
- ***Remifentanil*** alone can **regulate fluctuations of heart rate** and **blood pressure**, as well as provide an **amnesic effect**.
- ***Midazolam*** alone causes **decreased heart rate** and **blood pressure** and **increased duration of action**.
- ***Midazolam* combined** with ***Nitrous Oxide*** and ***Remifentanil*** is **indicated** for **patients with high anxiety** undergoing **long oral surgery procedures**, and for patients with **cardiovascular disease**.
- ***Diazepam*** alone is a **mild sedative** and is also **indicated** for patients with **low anxiety undergoing minor periodontal surgeries.**
- ***Dexmedetomidine*** alone causes **reduced hemodynamic parameters**, making it **useful** for procedures **involving increased bleeding**, however it is a **contraindication** for patients with **hypotension.**
- **Combining** a **low dose** of ***Dexmedetomidine*** with a **high dose** of ***Midazolam*** results in a **faster onset** and **longer duration of sedation**, which is **indicated for lengthy oral surgeries**.
- ***Propofol*** alone can cause **side effects** including **pain on injection**, **low levels of amnesia**, **intraoperative pain**, or **choking**, and therefore would not be indicated.
- ***Propofol* combined** with ***Nitrous Oxide*** is **indicated** for **patients with low anxiety** undergoing **short, uncomplicated procedures**.
- ***Propofol* combined** with ***Fentanyl*** and ***Dexmedetomidine*** is **indicated** for **long oral surgery procedures** with need for **controlled hemodynamic parameters**.
- **Inhalational *Sevoflurane*** was found to be a **valuable substitution** for ***Nitrous Oxide*** with **comparable patient satisfaction reports.**

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