Behavior Management Effectiveness of Midazolam Oral Sedation in Pediatric Patients Undergoing Restorative Dentistry: A Retrospective Chart Review.

Christopher Haas, DMD; Daniel Stoeckel DDS, MS; Avanija Reddy DMD, MPH

SAINT LOUIS UNIVERSITY
CENTER FOR ADVANCED DENTAL EDUCATION

SSMHealth Cardinal Glennon Children's Hospital

Introduction

One of the challenges of pediatric dentistry is a pediatric patient's fear at the dental office. The pediatric dentist's primary focus is to offer behavior guidance techniques that allow for providing care in a safe and positive manor. Unfortunately, not all pediatric patients can handle dental care through minimally invasive techniques such as tell show do and positive reinforcement. A more advanced option for behavior management is by adding the use of an oral sedative medication to improve a patient's ability to cooperate and reduce the patient's anxiety. Oral midazolam is a benzodiazepine used as one of the most common sedative medications in pediatric dentistry. It can be delivered either orally, Intramuscularly, nasally, or intravenous. The most common way pediatric dentists deliver midazolam is orally. (Gentz)

Purpose

No articles discuss behavior change from the original appointment he or she was referred from to the sedation based on a behavior rating scale. The Frankl behavior scale is widely used in pediatric dentistry in order to discuss patient behavior. This is because it provides insight as to how the patient performed at an appointment. How the patient accepted the treatment, level of cooperativeness, and positivity/negativity are all included within each Frankl Score.(Riba) As a retrospective chart review, I can review the change of Frankl score from one appointment to the next. The research study provides insight on the amount of change in behavior between dental visits with the aid of advanced behavior management technique. By knowing if versed alone is a viable behavior management option in improving behavior, practitioners can be more confident in their sedative of choice for advanced behavior management in pediatric patients

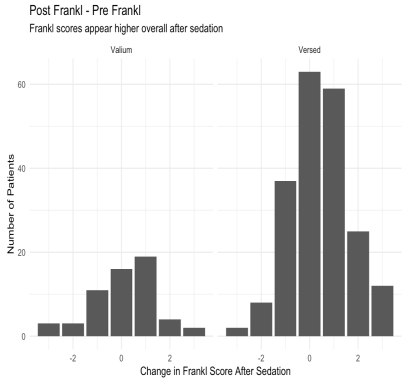
Methods

The study will be conducted as a retrospective chart review. All patient charts who have undergone midazolam oral sedation in our clinic until February 2023. In order to be scheduled for an oral midazolam sedation, a patient is first seen in our clinic through one of five appointments: Comprehensive exam, Recall exam, Operative appointment, Limited exam, or Oral sedation.

Notes about patient behavior and Frankl scores from the referring exam were noted and then compared to the notes regarding patient behavior and Frankl scores from the sedation appointment. Patients who have undergone sedation without a Frankl score reported, were subjected to review by three independent researchers. The three independent researchers are 2 pediatric dentistry residents and 1 Pediatric Dentistry Attending. They reviewed the behavior information provided in the note of the appointment. The same procedures were completed for missing PRE-sedation notes.

The data extracted from each chart for the study includes patient age, sex, appointment of sedation referral, Frankl score at sedation referral visit and Frankl score of the sedation visit.

Results



A paired Wilcoxon test and two way exact binomial test were performed determining that the Frankl scores were higher post sedation compared to pre-sedation ($p = 0.000005$) and a significant percentage of Frankl Scores showing increase ($p=0.000051$) No significant difference in versed when compared to other sedatives utilized in increasing Frankl score ($p = 0.1524$)

Results

A logistic regression with two-directional stepwise AIC variable selection was used to determine chance of increased frankl score based on age, sex, and appointment he/she was referred. There was a 50% chance Frankl score would improve if the patient was referred from a limited or operative appointment. There was no statistical difference in age or gender. Versed alone, there was a statistically significant increase in Frankl scores in patients referred from operative or limited exams.

ref	percent_increased	n
comprehensive	0.5294	34
limited	0.8824	17
operative	0.8571	42
recall	0.6000	35
sedation	0.4286	14

Conclusion

Oral midazolam is effective in improving Frankl Score in patients receiving restorative care. Patients referred from operative and limited exams may show improved behavior with midazolam oral sedation

References

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