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Background

- The effectiveness of oral midazolam combined with nitro sedating pediatric dental patients can be influenced by va patient's body mass index (BMI).^{1,2}
- BMI plays a significant role in pharmacokinetics, which re absorbs, distributes, metabolizes, and excretes a drug ³.

The purpose of this study was to evaluate the impact of BN oral Midazolam combined with nitrous oxide inhalation for patients

Methods

Study population:

• A retrospective chart review was conducted on patients, with benzodiazepine at the Franciscan Children's Pediatric March 1st 2021 and March 31st 2023.

Subjects were included if they:

- Had oral sedation with oral midazolam for a dental period.
- Are ages 12 and under.
- Have a complete sedation record uploaded to their Dentri Subjects were excluded if they:
- Are aged 13 or older.
- Did not take oral midazolam or taken combination of seda
- Did not consume 90% of sedation medication.
- Have a missing, incomplete, or illegible sedation record

A total of 323 subject reviewed and 291 eligible subjects we Data collection and analysis:

- The patients were divided into 4 groups: Underweight (BI weight (BMI 5th to 85th percentile); and Overweight ((BMI Obese (BMI >95th percentile)
- Sedation effectiveness was evaluated through the following sedation Houpt behavior rating scale during sedation (over effectiveness.
- Statistical analysis was performed using Microsoft Excel and Graph Pad . Significance testing was performed using unpaired t- test and Pearson's chi-square tests"

BMI and effectiveness of oral sedation in pediatric dentistry

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	Results Table 1. Description of		
ous oxide inhalation for various factors, including the			
efers to how the body	Age (years) Mean BMI		
MI on the effectiveness of or sedatina pediatric dental	BMI percentile Dose given (mg/kg)		
	Fasting time (hours)		
	Gender	Male Female	
who received oral sedation c Dentistry Clinic between	BMI classification	Underweigh Healthy weight Overweigh	
procedure during this time	Houpt behavior rating	Excellent Good Fair	
rix Document Center folder.	Overall sedation effectiveness	Poor Prohibitive Very effective	
ative agents		Effective Ineffective	
	Ability to complete treatment	Yes	
ere included.	Discussio	n & Con	
MI <5 th percentile); Normal I 86 th to 95 th percentile) ing variables: pre- and post- erall behavior), and overall	 The group attributed clearance. Metabolic 	of overwe to alterat This may difference	

Future studies with a more rigorous design, controlling for potential confounding factors such as dosage and behavioral diagnoses, are needed to gain a clearer understanding of the relation of BMI and effectiveness of oral sedation.



clusions

reight and obese individuals received a lower average dose per kilogram, which may be tions in pharmacokinetics. Factors such as fat distribution can impact drug absorption and ⁷ additionally be affected by hepatic volume and blood flow .⁴ es can affect drug absorption, leading to insufficient sedation. The reduced effectiveness of sedation in overweight or obese individuals may complicate treatment. Additionally, behavioral issues might result in higher rates of incomplete treatments.



Table 3. BMI class vs. overall effectiveness				
	Ineffective	effective or very	Ineffective	
		effective		
veight/	27	187	12.6%	
weight				
eight/	16	61	20.8%	

Table 3. Overweight/obese have 1.82 the odds of having an ineffective sedation, but not statistically significance (95%CI = 0.92 to 3.60; p value = 0.083) .**"overall effectiveness" variable: note that very effective and overly sedated were combined

Table 4. BMI class vs. Houpt behavior rating				
	Poor/Prohibitive	Excellent/Good/Fair	Poor/ Prohibitive	
eight/	38	176	17.8%	
ight/	17	60	22.1%	

Table 4. Overweight/obese has 1.31 the odds of having poor/prohibitive behaviors, but this relationship was not statistically significance (95% CI = 0.69 to 2.50; p value = 0.41)



BMI class vs. overall

effectiveness

Ineffective Effective or very effective

Overweight/ obese

Table 5. BMI class vs. completing treatment			BMI class vs. comp		
	Did not complete tx	Completed tx	Did not complete tx	100.0% 80.0% 60.0%	92.5%
weight/ y weight	16	198	7.5%	40.0% 20.0%	7 5%
eight/	15	62	19.5%	0.0%	Underweight/ healthy weight

Table 5. Overweight/obese has 3.0 the odds of having aborted treatment, but this relationship is significant (95% CI = 1.40 to 6.40; p value = 0.0034)



