

Weighted Stuffed Animals: Anxiety Reduction in Pediatric Patients Undergoing Restorative Dental Treatment

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Introduction

- Weighted blankets have become popular for their calming deep touch pressure (DTP) and potential therapeutic benefits.
- (DTP) mimics a firm hug or massage, activating the parasympathetic nervous system to reduce stress, slow heart and respiratory rates.
- Research show weighted blankets are safe and effective for children in pediatric dental settings, however research on weighted stuffed animals is lacking.

Objective

To evaluate the effectiveness of weighted stuffed animals in reducing dental anxiety in anxious pediatric patients during dental restorative treatment with nitrous oxide inhalation sedation.

Materials and Methods

- Randomized controlled trial study, participants are pediatric patients at Tufts ages 4-14 years with dental anxiety requiring treatment with nitrous oxide sedation.
- A pilot study was completed and the sample size calculation was determined as 67 per group considering the dropout rate of 20%.
- Subjects were randomly assigned to control or experimental group.
- Subjects who were assigned to the experimental group had a Harkla Weighted Lap Animal (5lbs) placed on their lap during the nitrous oxide procedure. Control groups completed procedure without weighted stuffed animals.
- The dental procedure was completed by a pediatric dental resident, the proceudres included the use of local anethesia and excludes dental extractions.
- After the visit, a self survey (The Venham Picture Test) were completed by the patients and Frankl score were recorded from the residents.
- Normality of the data was assessed with the Shapiro Wilk test. The data was not normally distributed, therefore the Mann-Whitney U test was used to measure difference in anxiety as measured by the self-survey and Frankl score. P-values less than 0.05 to be considered statistically significant. SPSS 29 was used for the statistical analysis .



Frankl score and Venham picture test

Rating	Attitude	Definition	
1	DEFINITELY NEGATIVE	Refusal of treatment, crying forcefully, fearful or any other overt evidence of extreme negativism.	
2	NEGATIVE	Reluctant to accept treatment, uncooperative, some evidence of negative attitude but not pronounced, i.e. / sullen, withdrawn.	
3	POSITIVE	Acceptance of treatment; at times cautious, willingness to comply with the dentist, at times with reservation but patient follows the dentist's directions cooperatively.	
4	DEFINITELY POSITIVE	Good rapport with the dentist, interested in the dental procedures, laughing and enjoying the situation.	

Results

- N = 77
- There is a statistically significant difference in median Frankl score between groups ($p < 0.001$) . The median Frankl score noted by the providers in the control group was 3 while in the study group was 4.
- The control group had an increased anxiety level in comparison to the study group. There is a statistically significant difference in median self-survey score between the two groups ($p = 0.02$).
- There is not a statistically significant association between gender and group ($p = 0.63$) and no difference in median age between groups ($p = 0.85$).

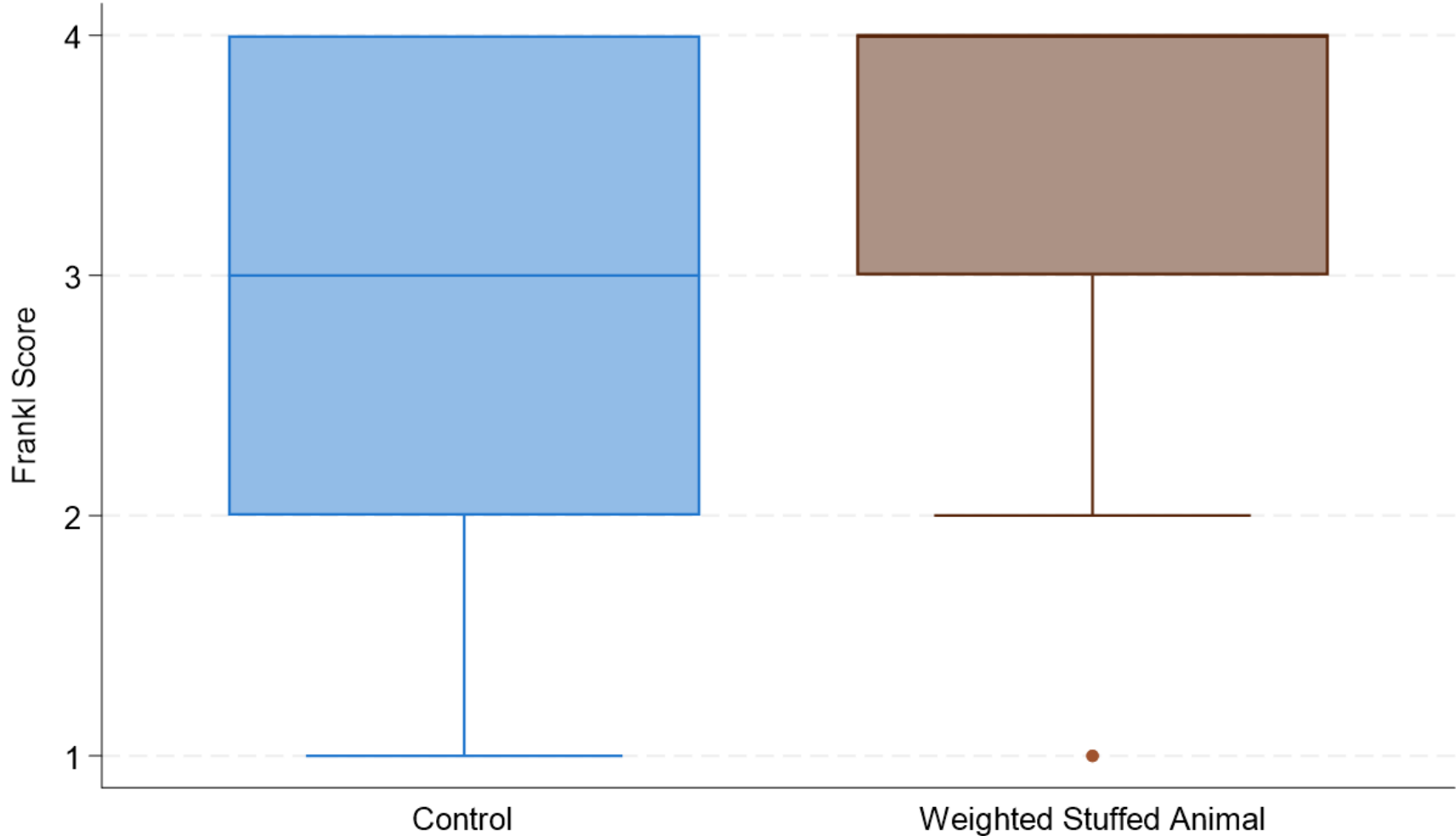


Figure 1. Box plots of the Frankl scores between the control and study groups ($p < 0.001$)

Results

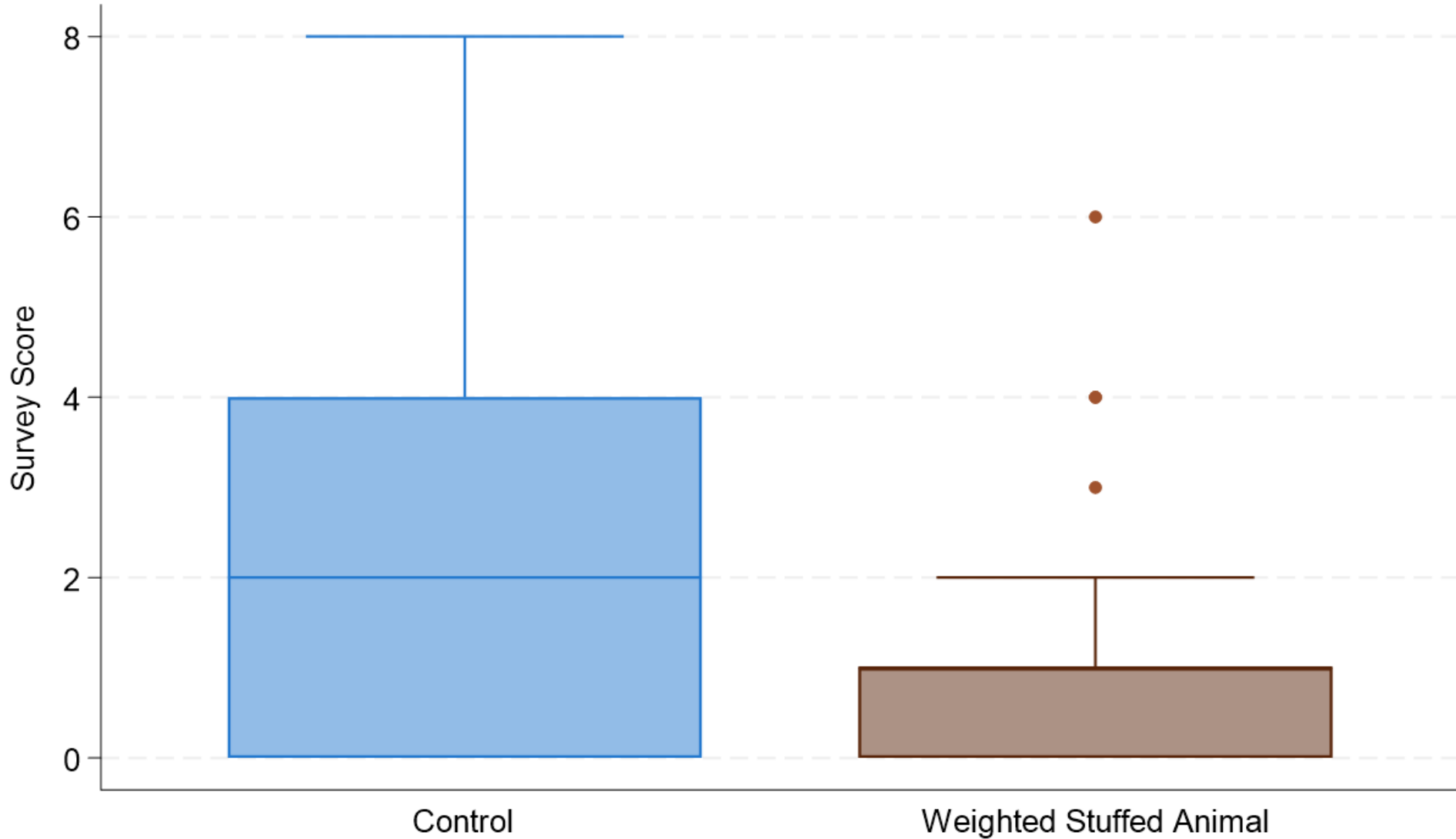


Figure 2. Box plots of the self-survey (Venham picture test) scores between the control and study groups ($p = 0.02$).

Conclusion

The results of the study demonstrated that the weighted stuffed animals reduced anxiety levels and improved observed behavior in pediatric patients with dental anxiety during dental restorative treatment with nitrous oxide.

References

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