

## Background

- General Anesthesia (GA) is used to treat children with extensive dental needs, uncooperative behavior, special needs, or young age. Children with extensive caries are more likely to be from disadvantaged families with limited health literacy.<sup>1,2</sup>
- Parents' knowledge of pre-operative GA instructions is affected by many factors, including: education level, health literacy, cultural and language barriers, previous GA experience, clinician communication skills, timing and method used for delivery of GA pre-operative instructions.<sup>2,3</sup>
- Limited knowledge of pre-operative GA instructions can lead to increased parental anxiety on the surgery day, and providers may not consistently present GA information.
- The use of an "on-demand" video could provide a standardized way to provide pre-operative information, thereby increasing knowledge/compliance and decreasing parental anxiety. There is a paucity of research investigating the effectiveness of a video for this purpose in dental settings.

## Objective and Hypothesis

- To evaluate if providing an educational video about GA in addition to written and verbal pre-operative instructions, increases knowledge, reduces caregivers' anxiety, and improves compliance more than written/verbal instructions alone.
- Hypothesis: the pre-operative video will increase knowledge, reduce anxiety, and increase compliance with GA instructions.

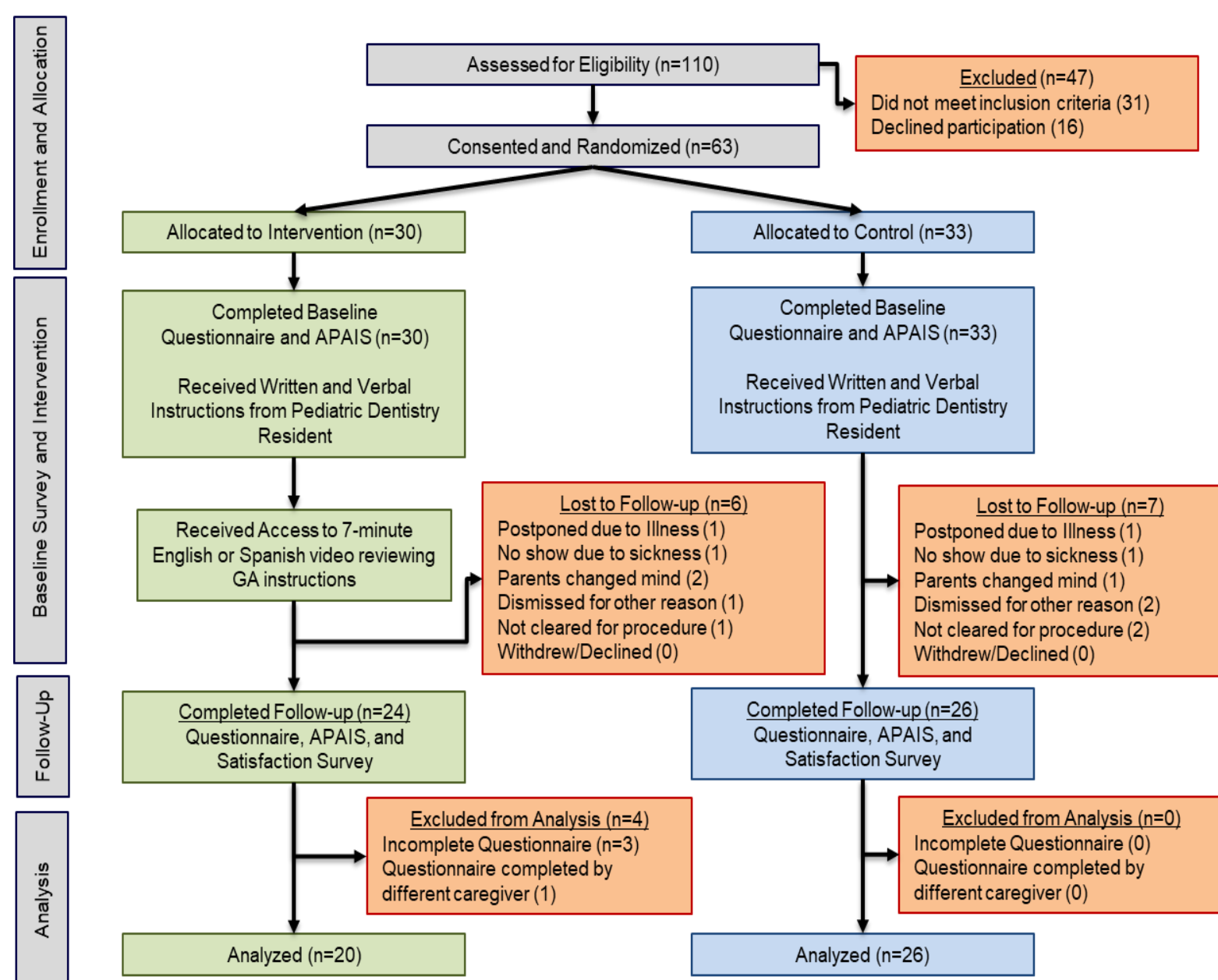
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## Methods

- Study Type/Setting:** Two-arm parallel randomized controlled trial conducted at the UIC College of Dentistry.
- Participants:** English- or Spanish-speaking caregivers of healthy children aged 3-6 years old receiving dental treatment under GA were recruited from Aug 2023 to Jan 2024. Parents who previously had other children under GA for dental rehabilitation were excluded.
- Data collection:** All caregivers completed a baseline questionnaire and the Amsterdam Preoperative Anxiety and Information Scale (APAIS) at the pre-op visit. Control and Intervention Groups received usual written and verbal GA instructions. The intervention group also received access to a 7-minute video. All subjects completed a follow-up survey on the day of surgery. QR codes to Intervention Videos:



Figure 1: Study CONSORT Diagram



## Results

Table 1. Sample Demographics

	Intervention N=20 (43%)	Control N=26 (57%)
Caregiver's Age, mean (SD)	34.4 (8.4)	34.08 (9.1)
Child's Age, mean (SD)	4.6 (1.0)	4.46 (.91)
Caregiver's gender		
Male	4 (20%)	2 (33%)
Female	16 (80%)	24 (60%)
Child's Gender		
Male	10 (50%)	8 (31%)
Female	10 (50%)	18 (69%)
Language		
English	17 (85%)	22 (85%)
Spanish	3 (15%)	4 (15%)
Race/Ethnicity		
White	6 (30%)	4 (15%)
Black	6 (30%)	5 (19%)
Hispanic	8 (40%)	16 (62%)
Other	0 (0%)	1 (4%)
Caregiver's Education		
High school or less	9 (45%)	11 (42%)
Some College or higher	11 (55%)	15 (58%)
Marital status		
Single or divorced	9 (45%)	10 (38%)
Married or living with partner	11 (55%)	16 (62%)
Dental Insurance Type		
Medicaid	19 (95%)	26 (100%)
Private or Self-Pay	1 (5%)	0 (0%)
Health Literacy, mean (SD)		
Problems learning about medical Dx	3.9 (0.79)	4.15 (0.73)
Need help reading medical information*	3.65 (1.3)	4.23 (0.99)
Confidence completing medical forms**	4.0 (1.1)	4.27 (1.1)

\*1=Always, 2= Frequently, 3=Occasionally, 4=Rarely, 5=Never  
\*\*1=Not at all, 2=A little bit, 3=Somewhat, 4=Quite a bit, 5=Extremely  
Independent t-tests, Chi-squared, and Fishers exact tests were run based on data type/distribution. There were no baseline differences between the intervention and control groups for any demographic or literacy items.

Table 2: Differences GA Knowledge Questions Within and Between Groups

GA Knowledge Questions	Intervention (N=20)			Control (N=26)			Pre-test vs. Control	Post-test vs. Control
	Pre-test	Post-test	Pre-vs. Post-test	Pre-test	Post-test	Pre-vs. Post-test		
Q1: Anesthesiologist is a medical doctor.	13 (65%)	16 (80%)	0.21	13 (50%)	21 (81%)	0.020 <sup>†</sup>	0.31	0.95
Q2: Child is completely asleep during GA.	18 (90%)	18 (90%)	1.00	22 (85%)	26 (100%)	0.037 <sup>†</sup>	0.59	0.099 <sup>‡</sup>
Q3: Child breathes through tube during GA	7 (35%)	17 (85%)	0.001 <sup>†</sup>	17 (65%)	20 (77%)	0.36	0.041 <sup>†</sup>	0.49

Chi-squared tests were run to examine if there are significant differences within or between groups on the pre-test or post-test.  
<sup>†</sup>statistically significant at p<0.05, <sup>‡</sup>marginally significant at p<0.1

Table 3: Differences in APAIS Anxiety Scores Within and Between Groups

Anxiety Questions*	Intervention (N=20)			Control (N=26)			Pre-test vs. Control	Post-test vs. Control
	Pre-test	Post-test	Pre-vs. Post-test	Pre-test	Post-test	Pre-vs. Post-test		
Anesthesia Anxiety Subscore Range= 3 (low) – 15 (high)	9.1 (3.71)	10.25 (3.4)	<0.001	9.58 (3.60)	11.42 (3.37)	<0.001	0.663	0.54
Q1. Worried about anesthesia	2.96 (1.54)	3.1 (1.52)	0.002	3 (1.44)	3.81 (1.36)	<0.001	0.91	0.103
Q2. Anesthesia is on my mind	2.35 (1.39)	2.85 (1.66)	<0.001	2.69 (1.52)	3.27 (1.45)	<0.001	0.43	0.368
Q3. Want to know as much as possible about anesthesia	3.80 (1.32)	4.3 (.923)	0.342	3.88 (1.31)	4.35 (1.16)	0.192	0.829	0.885
Procedure Anxiety Subscore Range= 3 (low) – 15 (high)	10 (3.22)	11.4 (3.2)	0.007	9.77 (3.29)	11.54 (3.69)	0.002	0.813	0.894
Q1. Worried about procedure	2.75 (1.45)	3.55 (1.61)	0.036	2.92 (1.55)	3.58 (1.55)	<0.001	0.701	0.637
Q2. Procedure is on my mind	2.80 (1.58)	3.20 (1.51)	0.012	2.69 (1.49)	3.42 (1.63)	0.005	0.814	0.667
Q3. Want to know as much as possible about the procedure	4.45 (0.89)	4.65 (.745)	0.073 (MS)	4.15 (1.08)	4.54 (.948)	0.004	0.327	0.25
Total Anxiety Score Range= 6 (low) – 30 (high)	19.10 (6.72)	21.65 (6.18)	<0.001	19.35 (6.75)	22.96 (6.95)	0.001	0.903	0.509

\*1=not at all, 2=somewhat, 3=somewhat, 4=moderately high, 5= very high  
Independent and paired sample t-tests were run to examine if there are significant differences within or between groups on the pre-test or post-test.

- Participants had moderately high self-reported health literacy, but many did not fully understand intubation or that anesthesiologists are physicians; they understood the child is asleep (Table 1).
- The video significantly increased knowledge of intubation in the intervention group, while the traditional written and verbal education significantly increased the control group's understanding of an MD/anesthesiologist and children are asleep during GA (Table 2).
- Parents reported significantly higher levels of anxiety in both groups on the day of surgery, and there was no difference in anxiety level between the groups at baseline or the day of surgery (Table 3)

## Conclusions

- The intervention effect was limited by incomplete viewing of the video. Most viewers watched it once and scrolled through the content, watching an average of 2:30 mins of the 7 minutes.
- The video showed the ability to reinforce some concepts, but it did not increase knowledge or reduce anxiety more than traditional verbal/written pre-operative GA instructions. Videos may complement written and verbal instructions but should not be a substitute for provider education.