



EISENHOWER HEALTH

**THE IMPACT OF AN ELECTRONIC TABLET
IN THE SAME DAY SURGERY SUITE ON
PREOPERATIVE ANXIETY AND
ENABLEMENT**

Kristen Tanner, BAN, RN

*Eisenhower Desert Orthopedic Surgery
Center*

Background

- Increased pressure for Healthcare workers to faster and smarter in outpatient surgery
- Higher patient anxiety prior to surgery
- The nurse is the bridge to providing education, assessment, and supportive care.
- Leveraging the nurse patient interaction combined with the use of interactive technology



OBJECTIVE

- Examined the impact of electronic tablets with interactive educational software that
- Provided a 3D visualization of the surgical procedure
- Measure patient's anxiety and enablement / empowerment



HYPOTHESIS

There will be a reduction in anxiety and increase in patient enablement levels when utilizing electronic tablets with 3D visualization of surgical procedures in the preoperative area



STUDY DESIGN

- Quasi –Experimental
- Randomized Study
- Convenience Sample

Surgical Procedures:

- Knee Arthroscopy
- Shoulder Repair
- Carpal Tunnel Repair



Control versus Study Group

- **Control Group:** Standard Nurse Encounter
- **Study Group:** Standard Nurse Encounter plus Electronic Tablet

Materials and Methods

- **Study approved by IRB**
- **All patient provided voluntarily consented to participate**
- **Study Site: Same Day Surgical Suite**
- **All patients had orthopedic procedures**
- **All procedures were completed by two Surgeons**
- **Study methodology was completed by two research nurses from the Same Day Surgical Suite**



Patients scheduled for Surgical Procedure: Knee Arthroscopy or Shoulder Repair or Carpal Tunnel Repair

Study personnel contact patient by telephone to introduce study

Patient agrees to receive more information about in study

Patient declines participation in study

Patient presents to EDOC pre-operative area for scheduled surgery

Research nurse obtains consent

Group1: (75 consecutive patients)
Patient receives preoperative nurse encounter

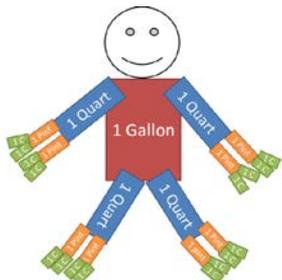
Group2: (75 consecutive patients)
Patient receives instructions on use of electronic tablet

Patient completes:
Demographic information
Preoperative Anxiety Level (APAIS)
Patient Enablement (PEI)

Data entered and analyzed by independent study personnel



Measuring Anxiety (APAIS)



The Amsterdam Preoperative Anxiety and Information Scale (APAIS)

Please put an X in the box that best describes your feelings.

	Not at all	1	2	3	4	5	Extremely
1. I am worried about the anesthetic							
2. The anesthetic is on my mind continually							
3. I would like to know as much as possible about the anesthetic							
4. I am worried about the procedure							
5. The procedure is on my mind continually							
6. I would like to know as much as possible about the procedure							



Measuring Patient Enablement (PEI)



Patient Enablement Instrument

Please put an X in the box that best describes your feelings.

1) As a result of your experience in the preoperative area today, do you feel you are...
(please tick one box in each row):-

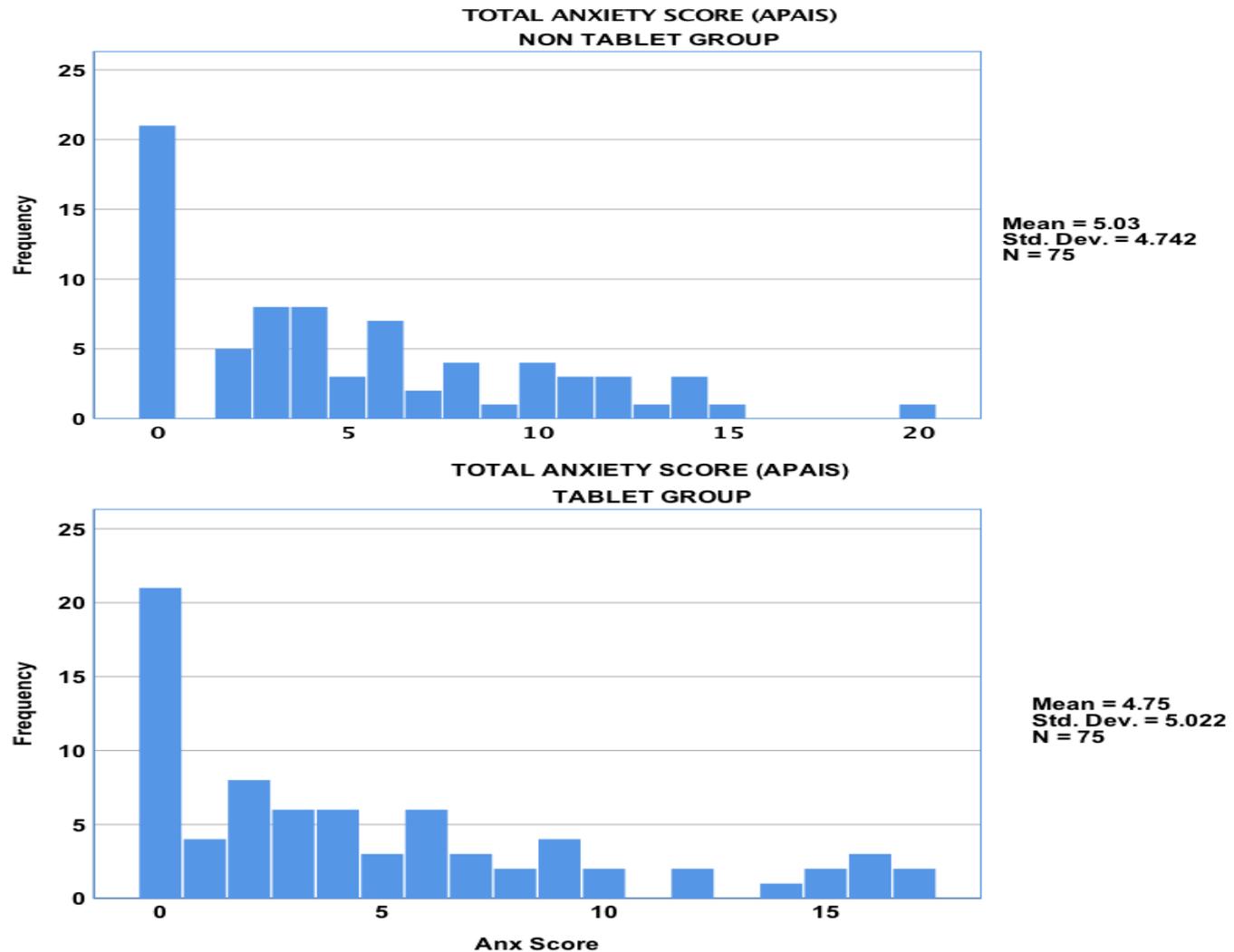
	MUCH BETTER	BETTER	SAME OR LESS APPLICABLE	NOT APPLICABLE
able to cope with life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
able to understand your surgery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
able to cope with your surgery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
able to keep yourself healthy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	MUCH MORE	MORE	SAME OR LESS APPLICABLE	NOT APPLICABLE
confident about your health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
able to help yourself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

RESULTS

- 150 patients enrolled into study
- Approximately thirty patients refused participation following consent b/c of feeling overwhelmed and anxious
- 75 patient received standard preoperative preparation, 75 patients utilized electronic table with 3 D software visualizing surgical procedure
- Both groups were similar in age, gender, and surgeon
- Some differences noted in distribution of number of knee and shoulder procedures between groups for knee and shoulder procedures.



APAIS: non-tablet vs tablet group

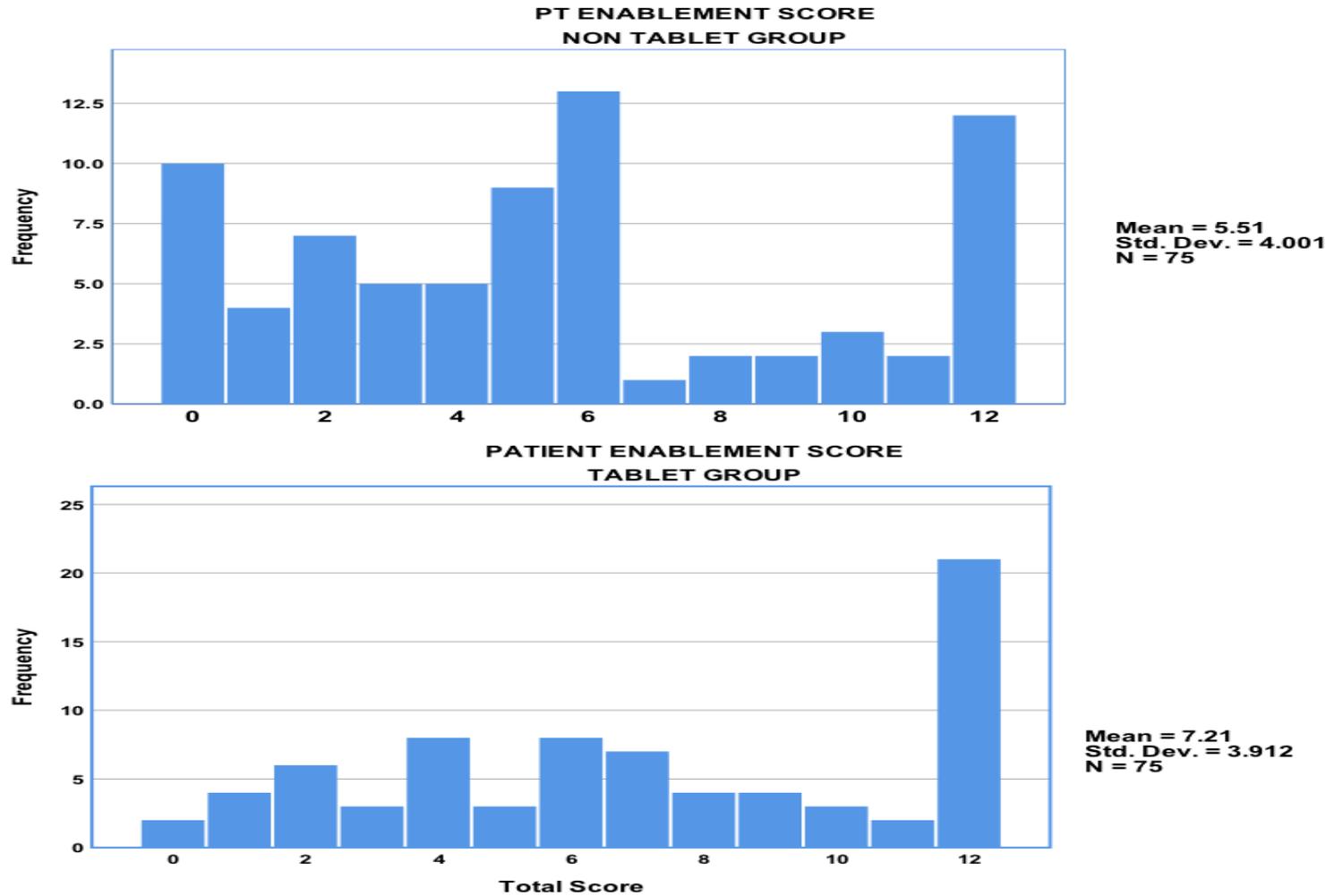


ANXIETY SCORES PAIRED T TEST

TABLE 3: APAIS ANXIETY SCORES			
	MEAN	STD DEV	p Value
ANASTHESIA ANXIETY SCORES: NON IPAD	2.44	3.3	
IPAD	2.03	2.8	0.411
SURGICAL ANXIETY SCORES: NON IPAD	2.59	2.8	
IPAD	2.72	2.7	0.77
TOTAL ANXIETY SCORES: NON IPAD	5.03	4.74	
IPAD	4.75	5.02	0.726
SCORE INTERPRETATION			
	LOW ANXIETY		4 - 10
	HIGH ANXIETY		11 - 20
DESIRES MORE INFORMATION: NON IPAD			
IPAD	5.08	3.7	
	5.03	3.8	0.931
SCORE INTERPRETATION			
	NO/LITTLE INFORMATION REQ		2 - 4
	AVERAGE INFORMATION REQ		5 - 7
	HIGH NFORMATION REQ		8 - 10



PEI: non tablet vs tablet



PATEINT ENABLEMENT SCORES PAIRED T TEST

TABLE 4: PATIENT ENABLEMENT INSTRUMENT SCORES			
	MEAN	STD DEV	p Value
TOTAL PATIENT ENABLEMENT:			
NON IPAD	5.51	4.0	
IPAD	7.21	3.9	0.009**
SCORE INTERPRETATION			
	low of 0 - high of 12		0-12
** significant p value < 0.05			



TIME SPENT WITH NURSES

PAIRED T TEST

TABLE 2 TIME PHYSICIAN AND NURSE SPENT WITH PATIENT, PT IPAD			
	MEAN	STD DEV	p Value
TIME DR SPENT WITH PT PREOP: NON IPAD	2.96	2.46	
IPAD	3.20	1.74	0.49
TIME DR SPENT WITH PT PREOP: NON IPAD	8.01	2.52	
IPAD	8.89	1.95	0.02**
TIME PT SPENT ON IPAD IN PREOP	4.8	2.11	N/A
** significant p value < 0.05			



SUMMARY

APAIS

- No differences were noted between groups, to include age, gender, procedure and office preparation
- Patients indicated a desire for more information in both groups

PEI

- Patients scored significantly higher in the Tablet Group
- Time spent with Nurse was significantly higher in Tablet Group



CONCLUSIONS

- The Same Day Surgical Suite is a fast moving intense environment that causes anxiety.
- Although there are some differences noted in Anxiety Scores, differences were not significant.
- Patients indicated that Preoperative Information was insufficient .
- Patients rated the visual presentation of procedure on tablet as highly desirable.
- Patient enablement scores were significantly higher with Nurse / Tablet interaction.
- Time spent with the nurse in preparation was significantly higher which may have lead to increased patient enablement.
- The nurse/patient interaction during instruction on use of the electronic tablet provided focused nursing care and patient cooperation leading to improvement of patient empowerment.
- The hypothesis was proven with higher patient enablement scores, but did not prove a reduction in patient anxiety with the use of nurse / tablet interactions.



Future Considerations

- ✓ A baseline for future studies
- ✓ Follow up with patients after surgery may provide increased insight into assessing whether patient sustained high levels of enablement
- ✓ Measuring Pre Operative Preparation before day of surgery could increase understanding of anxiety
- ✓ Continue to explore factors that lead to anxiety in the Same Day Surgical Suite
- ✓ Consider time pressures as an element that increases anxiety in the Same Day Surgical Suite, to target methods to reduce anxiety



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- Contact Information: Kristen Tanner,
ktanner@eisenhowerhealth.org
- Tammera Anderson:
tanderson2@eisenhowerhealth.org