To determine if there is a significant difference in knowledge retention between the pamphlet and iPad educated groups (p values all > 0.05)

### Background and Significance

Radical cystectomy is one of the treatment modalities used for patients with high-grade or muscle-invasive urothelial cancer. In-depth preoperative education regarding management of the diversion is necessary. Preoperatively, through direct patient observation, it was found that patients had poor retention of knowledge regarding the surgery, body image alteration, and the care involved after surgery. The existing preoperative education included booklet or pamphlet with overwhelming amount of instructions and verbal narration. An educational tool (like the “Draw MD”) application on the iPad that combines visual, auditory and interactive stimuli may be more effective for learning about urinary diversion during a preoperative visit.

### Purpose and Objectives

**Purpose:** To investigate whether knowledge retention using an iPad is more effective than existing traditional methods (i.e. pamphlets) when providing preoperative education in patients scheduled for cystectomy.

**Objectives:**

- To determine if there is a significant difference in knowledge retention in patients undergoing cystectomy when an iPad is used, in comparison to traditional methods (i.e. pamphlets).
- To investigate a potential change or continuation of the preoperative education medium in the Urology department at the Hospital of University of Pennsylvania.

### Methodology

**Design:** Pretest – Posttest with block randomization to one of the two education interventions (pamphlet vs. iPad).

**Recruitment:** Osmomy and Urology clinic in a large academic medical center.

**Sample Size:**
- Desired 40 patients (Based on previous two years influx of cystectomy patients over 4 to 6 months).
- Total of 12 patients enrolled.

**Questionnaire:** 10 multiple choices with the following themes:
- post-cystectomy anatomy (3 questions),
- care of urinary diversion (2 questions),
- drains (2 questions),
- immediate postoperative care (1 question) and
- lifestyle maintenance (2 questions).

**Education:**
- Traditional: Standard urology pamphlets with narration
- iPad: Draw MD with narration and giving standard pamphlet to review at home

### Results

<table>
<thead>
<tr>
<th>Analysis of Demographics between the Two Groups</th>
<th>Pamphlet Educated n (%)</th>
<th>iPad Educated n (%)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age Range 51-60</td>
<td>2 (22.2%)</td>
<td>3 (33.3%)</td>
<td>0.510</td>
</tr>
<tr>
<td>61-70</td>
<td>4 (54.5%)</td>
<td>5 (55.6%)</td>
<td></td>
</tr>
<tr>
<td>71-80</td>
<td>1 (11.1%)</td>
<td>0 (0%)</td>
<td></td>
</tr>
<tr>
<td>81-90</td>
<td>1 (11.1%)</td>
<td>1 (11.1%)</td>
<td></td>
</tr>
<tr>
<td>Gender Male</td>
<td>8 (88.9%)</td>
<td>8 (88.9%)</td>
<td>0.765</td>
</tr>
<tr>
<td>Female</td>
<td>1 (11.1%)</td>
<td>0 (0%)</td>
<td></td>
</tr>
<tr>
<td>Race Caucasian</td>
<td>3 (33.3%)</td>
<td>3 (33.3%)</td>
<td>0.487</td>
</tr>
<tr>
<td>Asian</td>
<td>1 (11.1%)</td>
<td>0 (0%)</td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>1 (11.1%)</td>
<td>1 (11.1%)</td>
<td></td>
</tr>
<tr>
<td>Education Non-High School</td>
<td>1 (11.1%)</td>
<td>0 (0%)</td>
<td>0.655</td>
</tr>
<tr>
<td>High School</td>
<td>3 (33.3%)</td>
<td>3 (33.3%)</td>
<td></td>
</tr>
<tr>
<td>Bachelors or Associates</td>
<td>2 (22.2%)</td>
<td>2 (22.2%)</td>
<td></td>
</tr>
<tr>
<td>Masters</td>
<td>2 (22.2%)</td>
<td>2 (22.2%)</td>
<td></td>
</tr>
<tr>
<td>Medical Professional</td>
<td>1 (11.1%)</td>
<td>1 (11.1%)</td>
<td></td>
</tr>
<tr>
<td>Non-Medical</td>
<td>2 (22.2%)</td>
<td>2 (22.2%)</td>
<td></td>
</tr>
</tbody>
</table>

When comparing all demographic variables for each group using Chi Square and Fisher exact test as appropriate, it was found that there were no significant differences between the pamphlet educated and iPad educated groups.

### Implications

Detailed explanation of postoperative expectation is crucial to patients’ retention of knowledge regarding the perioperative care. Verbal expression of satisfaction from patients who received the iPad based preoperative education imply that patients prefer an educational medium that presents instructional content through verbal, visual and interactive cues. Based on the final results of this study (after gaining a large enough sample size), a decision may be finalized in the department regarding whether iPad education will become the standard in educating patients undergoing cystectomy surgeries. DNP prepared nurses are required to lead any initiatives related to the introduction of multimedia into patient education in their practices.

### Limitations

- Small sample size
- Minimal research comparing audiovisual aids (videos and DVDs) to “traditional” methods in education of patients undergoing surgery to support the foundation of this study.

### Recommendations

This practice inquiry project will need to continue to procure more patients in order to get a sufficient sample size.

Further future research will need to continue to explore other outcomes like patient satisfaction, patient anxiety or length of stay.

Designated clinic visits or extended hours for patient education should be set up for every patient undergoing complex life altering surgeries. There is a significant need to use technology in patient education.

- Multimedia tools like iPads or tablets should be utilized as a standard for patient education to improve knowledge retention and enrich the perioperative experience (irrespective of the final study results).

### References

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