Interactive Patient Engagement on Patient Medication using Technology Solutions

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**ASK THE QUESTION**

**Clinical Question:**
In adult medical surgical patients, what is the effect of interactive patient engagement (i.e., technology solutions) on patient satisfaction of medication education?

**Objective:** To critically review evidence related to relative effectiveness of interactive patient engagement using technology solution on patient satisfaction of medication education

**Background:** At MUSC, HCAHPS is utilized to measure the patient’s perceptions of the consistency of the quality they received. One of the subcategories is a question on education provided by nurses before administering new medication to patients. Technology solutions have been available at MUSC as an additional method of teaching patients. The availability of this technological solution does not reflect a positive impact on patient satisfaction scores for medication education. The goal is to apply evidence-based practice by utilizing a technological solution to its maximum potential in promoting better patient outcomes.

**SEARCH FOR EVIDENCE**

**Databases searched:** PubMed, CINAHL, Scopus, Google Scholar, and references and citing articles

**PubMed simple search:** (interactive OR technology OR video) AND ("Patient Satisfaction"[Mesh] OR "patient satisfaction") AND ("Patient Education as Topic"[Mesh] OR "patient education") AND medication

**CINAHL search:** (interactive OR technology OR video) AND "patient satisfaction”) AND "patient education” AND medication
**Scopus:** TITLE-ABS-KEY(medication teaching) OR (Technology) OR (interactive patient engagement) AND ( LIMIT-TO(PUBYEAR,2012) ) AND ( LIMIT-TO(SUBJAREA,"NURS") )

**Google Scholar:** “patient medication education video”

**Limits/filters applied:** included scholarly articles published in English within the last 5 years

### CRITICALLY APPRIASE THE EVIDENCE

<table>
<thead>
<tr>
<th>Author/Date/ Journal</th>
<th>Purpose of Study</th>
<th>Study Design</th>
<th>Sample and Setting</th>
<th>Outcomes</th>
<th>Design Limitations</th>
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<tr>
<td>Armstrong, Kim, Idriss, Larsen &amp; Lio/ 2011/ Journal of the American Academy of Dermatology</td>
<td>To assess the effectiveness of online video education at improving AD knowledge and disease severity compared with a written pamphlet, and to determine the usefulness and appeal of the two educational delivery vehicles.</td>
<td>Randomized controlled trial</td>
<td>80 participants were randomized to receive either online video-based patient education or written pamphlet education about AD and its management. AD disease severity was assessed through the use of patient-</td>
<td>All participants had similar baseline knowledge and AD severity at the beginning of the study. On study completion, improvements in AD knowledge assessed by questionnaire were significantly greater in the video group than the pamphlet group (3.05 vs 1.85, ( P = .011 )). Online video-based education resulted in greater improvement in clinical outcome, as measured by POEM, compared with pamphlet-based education (POEM score.</td>
<td>Study Limitations = Limited to AD in adults. <strong>RCT &amp; Quasi-Experimental Studies</strong>  - Insufficient sample size  - Lack of randomization  - Lack of blinding  - Stopped early for benefit  - Lack of allocation concealment  - Selective reporting of measures  - Large losses to F/U</td>
</tr>
</tbody>
</table>

**Lower Quality Rating if:**

- Studies inconsistent (When there are differences in the direction of the effect, populations, interventions or outcomes between studies)
- Studies are indirect (Your PICO question is quite different from the available evidence in regard to population, intervention, comparison, or outcome)
- Studies are imprecise (When
| Wang, Dudjak, Larue, Ren, Scholle & Wolf / 2013 / Computers, Informatics, Nursing: CIN | To use goal setting and SmartRoom patient education videos to examine whether the videos more effectively engaged patients and their families in their discharge plan and encouraged | Descriptive statistics design | 741 patients on three different patient groups, who received postoperative care in a 25-bed orthopedic spine surgical unit at UPMC Presbyterian hospital. Baseline | Patient satisfaction scores in group 3, the patients who received the goal setting and SR education videos, increased for all five questions compared with the scores in group 2, where patients received only the Surgical Flight Plan (SFP). The increase in scores reached statistical significance on two questions: “How often...” | Study Limitations = Study is limited only to postoperative patients on orthopedic spine surgical unit. **Non-Experimental/Observational Studies (case-control, cohort, cross sectional, longitudinal, descriptive, epidemiologic, case study/series, QI, survey)**
- Insufficient sample size
- Sample not representative of patients in the population as a whole
- Variables (confounders, exposures, predictors) were not described
- Outcome criteria not objective or studies include few patients and few events and thus have wide confidence intervals and the results are uncertain | **Increase Quality Rating if:**
- Large Effect

| **Level of evidence for studies as a whole:**
- High
- Moderate
- Low
- Very Low

patient oriented eczema measure (POEM) scale. AD knowledge was assessed with standardized questionnaires at baseline and after the 12-week intervention. reduction of 3.30 vs 1.03, \( P = .0043 \).

Finally, although the usefulness of both interventions was rated equally \( (P = .77) \), the online video was significantly more appealing than the pamphlet \( (P = .0086) \).
them to take a more active role in their care while hospitalized.

patients were in group 1 (n = 273); these individuals were discharged between January 1 and March 30, 2009, which was prior to initiation of the SFP. Patients in group 2 (n = 254) were discharged between January 1 to March 30, 2010, which was approximately 8 months after the SFP was in place. Patients in group 3 (n = 214) were discharged between April 1 and did the nurse explain things in a way you could understand?’’ for group 3 versus group 1 (P = .0275) and ‘’Did staff tell you what new medication was for?’’ for group 3 versus group 2 (P = .0286).

were not applied in blind fashion

☐ Insufficient follow-up, if applicable

☐ For prognostic study, sample not defined at common point in course of disease/condition

☐ For diagnostic study, gold standard not applied to all patients

☐ For diagnostic study, no independent, blind comparison between index test and gold standard
To examine the effects of presentation medium on immediate and delayed recall of information and assessed the effect of giving patients take-home materials after initial presentations.

**Wilson, et. al. / 2010 / Patient Education and Counseling**

**Methods**

- **Participants:** 450 middle-aged and older adults who were patients at either Northwestern Memorial Hospital's General Internal Medicine Clinic in Chicago, Illinois or the Saint Francis/University of Connecticut Primary Care Center at the Burgdorf/Bank of America Health Center in Hartford, Connecticut.

- **Intervention:** Participants receiving either intervention outperformed controls on immediate and delayed assessments ($p < 0.001$). For symptom-related information, immediate performance did not significantly differ between print and video participants. A week later, receiving take-home print predicted better performance ($p < 0.05$), as did self-reported review among recipients of take-home print ($p < 0.01$).

- **Material:** For content about inhaler usage, although video watchers outperformed print participants immediately after seeing the materials ($p < 0.001$), a week later these two groups did not significantly differ.

**Study Limitations**

- None

**Non-Experimental/Observational Studies (case-control, cohort, cross sectional, longitudinal, descriptive, epidemiologic, case study/series, QI, survey)**

- Insufficient sample size
- Sample not representative of patients in the population as a whole
- Variables (confounders, exposures, predictors) were not described
- Outcome criteria not objective or were not applied in blind fashion
- Insufficient follow-up, if applicable
- For prognostic study, sample not defined at common point in course of disease/condition
- For diagnostic study, gold standard not applied to all patients
- For diagnostic study, no independent, blind comparison between index test and gold standard
All participants were at least 40 years old and reported speaking English as their main language. Groups' performance did not significantly differ. Among participants given take-home materials, review predicted marginally better recall ($p = 0.06$). Video and print interventions can promote recall of health-related information. Additionally, reviewable materials, if they are utilized, may improve retention.

**APPLY THE EVIDENCE**

**Practice Recommendation:** Technological solutions positively impact patient satisfaction scores on medication education. **Strong, Moderate Quality Evidence**

**EVALUATE THE EVIDENCE**

**Outcome & Process Measures:**
- Utilization of technological solutions vs non-technological patient medication teaching approach.
- HCAHPS scores
- GetWellNetWork utilization

**Implementation Plan:**
- Staff education by IPCC.
- Audit GWN utilization.
REFERENCES

