Pilot Project: Using a Pain Tracking App in an Adult Oncology Pain Clinic

Conflict of Interest Disclosure

- Dr. Kathy Castille DNP, NP-C, APRN-BC - none
- Faculty Chair: Dr. Deborah Kirk Walker DNP, FNP-BC, NP-C, AOCN, FAANP – none
- Faculty Co-Chair: Dr. Richard Taylor DNP, CRNP, ANP-BC - none

Baffled!

“My pain is 8/10 today, my medicine isn’t working”
### Lots of Pain

- High self-reported pain by clinic patients
  - High doses of opioids and combinations of opioids
  - Patients with both metastatic and non-metastatic cancer types
  - Multimodal approach of care
  - Reported pain >5 on the Pain Numeric Rating Scale (0= no pain and 10=worst pain)

### Background: Incidence of Pain

- Incidence of pain in cancer is variable
  - 24-60% patients in treatment,
  - 62-86% patients with advanced cancer
  - 33% patients in remission
- Millions of patients requiring cancer pain management (Agboola et al., 2014)

### Background

Despite standardized guidelines, 50% of those treated are not controlled.
(Dianda, Montazeri, Moje, & Apelgren, 2000; Paece & Vie Renna, 2014).
Barriers of Pain Care

- **Provider Driven:**
  - Social and Cultural differences
  - Inadequate training
  - Biases
  - Fear

- **Patient Driven:**
  - Patients believe their pain cannot be controlled despite treatment (Flock et al., 2010)
  - Social and cultural differences for expressing pain
  - Unaware of self-management

Internal Analysis

Symptom Inventory Questionnaire:
- Baseline, 2nd visit and 3rd visit
- Pain Numeric Rating Scale (0 to 10)

Total of 2,215 survey answers:
- 0 to 4 = 1,107 (49.75%)
- 5 to 7 = 667 (29.98%)
- 8 to 10 = 441 (20%)
Support of Technologies

- World Health Organization
  - Defines mobile health (mHealth) technologies as "medical and public health practices supported by mobile devices, such as mobile phones, patient monitoring devices, personal digital assistants and other wireless devices" (WHO, 2011)

- Institute of Medicine (2010) and Healthy People 2020
  - Facilitate the use of technology that people use everyday
  - Nursing to facilitate partnering for redesigning healthcare
  - Use technology to build skills and knowledge

mHealth Technologies

- mHealth APP downloads (de la Vega & Miro, 2014; Institute of Medicine, 2015)
  - 300,000 paid downloads expected in 2016
  - 3 million free downloads expected in 2016
  - 69% who use them believe important to track health
  - 46% of those who use them are changed
mHealth Technologies

- 65-90% of Americans own mobile phones
- 91% keep within arms reach (Smith, 2015)
- Cost effective, accessible, and portable

PICOT Question

Will adult oncology patients of the CTCA Atlanta Oncology Pain Clinic who report high pain scores (>4 on the numeric rating scale) and use a mobile pain tracking app have improved pain and self-efficacy scores in 60 days compared to baseline scores?

Evidence

- Use of pain-tracking APPs with patients
  - Agboola et al. (2015) systematic review (SR) of 20 clinical trials support using a pain and symptom tracking APPs in addition to coaching were effective in pain improvement and quality of life measures.
  - Guillory et al. (2015), Hansen (2015), and Kristjansdottr et al. (2013) clinical trials supported the use of pain tracking APPs with coaching intervention for improved pain and self-efficacy.
Evidence

- Usability of pain-related apps
  - De la Vega & Miro (2014) SR and meta-analysis of 47 pain related citations reporting on 34 APPs
  - Of the 283 available APPs available online, authors reported only one of the 34 studied apps were among them
  - Of the 40 commercially available APPs De la Vega analyzed, 65% are created by licensed healthcare providers but not scientifically validated
  - Pombo et al. (2016) systematic review of 62 studies found support of usability of pain tracking APPs in monitoring pain in real-time

Conceptual Framework: What Works?

- Population: 65% live in another state
- All have pain
- Models: So many to choose from, what is going to be best for a population who must improve self-care?
  “Patient-Centered”

Empowerment as a Conceptual Framework

- Empowerment defined as a process:
  - The European Network on Patient Empowerment (ENOPe, 2012, p. 1677)
  - “To help people gain control, which includes people making decisions.”
- Empowerment in improving self-managed pain in oncology
  - Pain tracking app is a patient-centered tool
  - Facilitate and engage the patient
  - Involvement in care decisions smile
  - Symptom awareness and treatment decisions at home
  - Improved self-managed pain care
Empowerment: Process or an Outcome?

Process:
- Empowerment is a patient-centered process that authorizes the patient to be engaged in care.

Outcome:
- Empowerment is:
  - A patient-centered outcome that enhances the sense of self-efficacy
  - Engagement occurs as a result of the empowerment process (Anderson and Funnell, 2010)

Empowerment: Five Domains of Personal Control

- Cognitive Control: Understanding pain treatment options & awareness of pain triggers
- Behavioral Control: Acting to improve pain & adhere to plan
- Emotional Control: Reflecting on feelings & coping with pain
- Decisional Control: Choosing treatment options & engagement in self-care
- Hope: Goal-driven Pain-Tracking APP Use

Empowerment Conceptual Model

- Engagement in Pain Management
- Pain Tracking & APP Use
- Improved self-efficacy & empowerment
Methodology for Pain Project

Elements for Measure:
• Pain scales
• Pain Self-Efficacy Questionnaire (PSEQ) (Nicholas, 2007)

Method for Measuring:
• Number Rating Scale
• Pain Self-Efficacy Number Rating Scale

Analysis Necessary:
• Descriptive Study
• Correlation Study
• Paired t-test
• Chi-square

Method of analysis:
• measure central tendencies, median, and standard deviation
• measure pre and post intervention pain scores and PSEQ scores
• measure categorical variables for cancer type
• SPSS and Excel for data analysis

Tools for the project measures:
• Chart review for previous pain scores.
• Pain numeric rating scale
• PSEQ scores
• Number of app pain scores

Protection of data (IRB):
• Assign numbers to each participant separate the data from the patient identifiers.
• Store the data in separate secured files or computer system that is password secure.

Expected Outcomes

• Project expectations
  • Improved pain scores thus improving other quality of life measures such as sleep and activity levels
  • Improved self-efficacy scores
  • Improved pain coping strategies
  • Improvement in patient-provider communication
Implications of Project

- Implications of using a pain tracking
  - An innovative approach for patient engagement
  - A tool for monitoring symptoms and improving awareness of pain and triggers
  - A tool for engaging patients for behavioral change
  - A tool that facilitates a patient-centered approach

uMotif Pain Tracking App

- Patients document daily symptoms of pain.
- Captures data
  - Monitor of symptom in real time
  - Share data with provider
  - Understand symptoms and circumstances of pain
- Patients can track pain symptoms and compare over time
- Written consent obtained from developers

uMotif Pain Tracking App: Screens
Using Pain Tracking App in an Oncology Pain Clinic

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Question</th>
<th>Possible Choices</th>
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</thead>
<tbody>
<tr>
<td>Pain Severity</td>
<td>How bad is your pain now?</td>
<td>None, Mild, Manageable, Severe, Debilitating</td>
</tr>
<tr>
<td>Change in Pain</td>
<td>How much has your pain changed since yesterday?</td>
<td>Got a lot better, Got a bit better, No change, Got a bit worse, Got a lot worse</td>
</tr>
<tr>
<td>Daily Activities</td>
<td>How much is your pain affecting completion of daily activities?</td>
<td>I have no problems doing my usual activities, I have slight problems doing my usual activities, I have moderate problems doing my usual activities, I have severe problems doing my usual activities, I am unable to do my usual activities</td>
</tr>
<tr>
<td>Sleep Quality</td>
<td>How well did you sleep last night?</td>
<td>Great sleep, Good sleep, OK sleep, Bad sleep, Terrible sleep</td>
</tr>
<tr>
<td>Mood</td>
<td>How is your mood now?</td>
<td>Very happy, Happy, Content, A bit down, Very down</td>
</tr>
</tbody>
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The uMotif pain tracking app is modified to represent the questions of the EQ-5D-5L smartphone tool developed by EuroQol Group (1990).

The Pain Self-Efficacy Questionnaire (PSEQ)

Pain Clinic Population

Age Groups

<table>
<thead>
<tr>
<th>Age</th>
<th>Age Groups</th>
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<tbody>
<tr>
<td>20-30</td>
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<tr>
<td>30-35</td>
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<td>65-70</td>
<td>10</td>
</tr>
<tr>
<td>70+</td>
<td>10</td>
</tr>
</tbody>
</table>
Pain Clinic Population

State of Residency

- AL: 3%
- AR: 5%
- CA: 7%
- FL: 1%
- GA: 2%
- KY: 1%
- LA: 2%
- MS: 1%
- NC: 10%
- SC: 1%
- TN: 10%
- VA: 1%
- WV: 1%

Total: 30

Yes: 27
No: 23

Self-Reported Pain >4

Breast Colon Lung Pancreatic Prostate Rectal

Total 50 26 31 25 18 11

Yes 27 10 16 11 7 6
No 23 16 15 14 11 5

228 Screened Patients

- [Diagram]

- [Diagram]
Findings

- 18 of 228 met criteria
- 9 volunteered participation (3 male & 6 female)
- 1 male lost to follow-up
- N= 8
- Average age 49.37 (SD 8.14)
- Mean pain scores:
  - 6.3 initially, 7.5 at 30 days, & 4.88 at 60 days

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Findings

- No significant effect for t-test of PSEQ scores: mean pre-PSEQ and post-PSEQ score = 27.25, SD = 14.28 and 31.13, SD 14.54, respectively (p = 0.434)
- No significant effect for t-test of pain scores at 0 to 30 days (p = 0.448) and 0 to 60 days p = 0.468, however there was significant effect at 30 to 60 days (p = 0.025)

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Revelations

- 2 of the 9 passed away during the 8 weeks
- 2 were glad to stop using the app, “didn’t see the purpose”
- 1 realized his pain was not as bad at home as he thought
- 1 realized that he was experiencing good days and spending quality time with his family
Patient Reported Revelations

- "You won't give me any pain pills if I don't tell you I'm in pain and sometimes I do have a lot of pain"
- Patient reported the APP helped her realize she was getting confused about taking her medications and she needed a better way of keeping track.

Q&A

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NO Pain
References


