The Effects of a Customized Medication Program on Oral Chemotherapy Patients

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Purpose
The purpose of this study was to evaluate the effects of the tailored drug management program for cancer patients taking oral anticancer drugs on the self-efficacy, knowledge, symptom experience, medication adherence and staff satisfaction regarding cancer patients.

Methods

2 Program development

The ADDIE-model (Branch, 2009) was used to develop an oral anticancer drug management program. Total 6 weeks program (3 times face-to-face counseling, 2 times telephone counseling, 6 times text messaging).

- Understanding the program
  - Face to face counseling Send text message

- Finding the correct drug and side effects
  - Face to face counseling Send text message

- Manage me(1)
  - Phone counseling Send text message

- Manage me(2)
  - Phone counseling Send text message

- Finish the program
  - Phone counseling Send text message

3 Results

Pre & Post Instrumental variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Groups</th>
<th>Pre-test Mean±SD</th>
<th>Post-test Mean±SD</th>
<th>t</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence</td>
<td>case</td>
<td>38.27±2.78</td>
<td>39.07±2.18</td>
<td>-1.787</td>
<td>.197</td>
</tr>
<tr>
<td></td>
<td>control</td>
<td>38.1±2.82</td>
<td>39.06±1.98</td>
<td>-0.864</td>
<td>.399</td>
</tr>
<tr>
<td>Knowledge</td>
<td>case</td>
<td>7.43±3.21</td>
<td>7.37±1.93</td>
<td>-1.322</td>
<td>.098</td>
</tr>
<tr>
<td></td>
<td>control</td>
<td>7.43±2.36</td>
<td>7.03±2.22</td>
<td>-0.849</td>
<td>.434</td>
</tr>
</tbody>
</table>

Instrumental Variables

- Case (n=30) Median(range)
- Control (n=30) Median(range)
- p-value
- Confidence
  - 40(32-40)
  - 40(32-40)
  - .668
- Knowledge
  - 8(4-10)
  - 8(3-10)
  - .724
- Symptom
  - Frequency 1.53(2)
  - 1.20(3-6)
  - .900
  - Intensity 8.2(2.20)
  - 8.2(2.2)
  - .935
  - Pain 5.0(3-3)
  - 5.10(3-6)
  - .888
- Compliance
  - 8(4.8-8.0)
  - 7(1.7-8)
  - .288

Influencing factors for satisfaction

<table>
<thead>
<tr>
<th>Variables</th>
<th>Simple regression</th>
<th>Multiple regression</th>
<th>B</th>
<th>S.E.</th>
<th>Low</th>
<th>High</th>
<th>p-value</th>
<th>B</th>
<th>S.E.</th>
<th>Low</th>
<th>High</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application of medication management program</td>
<td>5.867</td>
<td>2.908</td>
<td>0.047</td>
<td>11.687</td>
<td>0.048</td>
<td>7.368</td>
<td>2.805</td>
<td>1.508</td>
<td>13.147</td>
<td>0.013</td>
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<tr>
<td>Age over 60</td>
<td>0.473</td>
<td>2.014</td>
<td>-5.560</td>
<td>0.976</td>
<td>0.876</td>
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<tr>
<td>Sex - Male</td>
<td>1.959</td>
<td>3.024</td>
<td>-4.809</td>
<td>8.012</td>
<td>0.810</td>
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<tr>
<td>Education level - college degree or higher</td>
<td>-0.762</td>
<td>3.230</td>
<td>-7.128</td>
<td>5.904</td>
<td>0.817</td>
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<tr>
<td>Marriage status - with spouse</td>
<td>8.926</td>
<td>4.874</td>
<td>-3.831</td>
<td>16.68</td>
<td>0.072</td>
<td>8.072</td>
<td>4.632</td>
<td>-1.127</td>
<td>17.411</td>
<td>0.087</td>
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<tr>
<td>Occupation - yes</td>
<td>4.089</td>
<td>2.966</td>
<td>-1.148</td>
<td>10.027</td>
<td>0.173</td>
<td>5.629</td>
<td>2.903</td>
<td>-0.186</td>
<td>11.445</td>
<td>0.058</td>
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<tr>
<td>Diagnostic name - stomach cancer, colon cancer, etc.</td>
<td>3.383</td>
<td>3.732</td>
<td>-10.119</td>
<td>-3.380</td>
<td>0.322</td>
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<tr>
<td>Stage - 4</td>
<td>-1.426</td>
<td>3.146</td>
<td>-7.523</td>
<td>4.671</td>
<td>0.807</td>
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<tr>
<td>Drug type - Zeloda etc.</td>
<td>-4.108</td>
<td>3.103</td>
<td>-13.720</td>
<td>3.935</td>
<td>0.114</td>
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<tr>
<td>Combination chemotherapy - yes</td>
<td>1.722</td>
<td>2.052</td>
<td>-1.406</td>
<td>7.891</td>
<td>0.376</td>
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</tbody>
</table>

4 Conclusion

- There was no significant difference on self-efficacy, knowledge, symptom experience and medication adherence, but there was a significant effect on staff satisfaction.
- Considering the positive outcome of the tailored drug management program, the specialist’s nursing effort is needed to improve symptoms and medication adherence, and also a medication counseling hotline is needed to support the medical staff.

Study Design

Preliminary research: At the time of the first study registration

Follow-up: 6 weeks after taking medication

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Pre-test</th>
<th>Intervention</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>C1</td>
<td>X</td>
<td>C2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C1, E1: Pre-survey (general, disease-related characteristics, knowledge of drug use, self-efficacy)
C2, E2: Preliminary study (knowledge of drug use, self-efficacy, symptom experience, medication use, medical staff satisfaction)
X: Medication management program

Subject

- Patients who received oral cancer chemotherapy among outpatients of outpatient cancer hospital in Y General Hospital in Seoul
- Three of the experimental group and three of the control group were eliminated and the final 60 were confirmed.

Research Tools

Self-report questionnaires, general, disease-related characteristics and measurement tools of the subject