The Implementation of Evidence-Based Practices: Applying a Goal Commitment Framework

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Evidence-based Practices

- Evidence-based practice:
  - integrates clinical expertise with best available evidence from systematic research to make decisions concerning patient care.
  - may be promoted using clinical practice guidelines, defining standards of care.
What is implementation?

- The study of methods to promote systematic uptake and consistent integration of research findings and evidence-based practices into routine practice.
Barriers to Implementation

- Consistent delivery of guideline-indicated care remains a challenge:
  - Lack of organizational support and resources
  - Provider resistance
  - Lack of understanding of the implementation process
Why We Need Theory

- The implementation process is infrequently driven by theoretical constructs.
- Theories may help identify individual characteristics and organizational conditions that facilitate effective implementation.
Study Objectives

- Using VA’s roll-out of the Major Depressive Disorders Guidelines as an example, the study aims to:
  1. Test a theoretical framework that identifies factors facilitating guideline implementation;
  2. Understand the effects of the intermediate implementation outcomes on provider practice.
An initial screening for Major Depressive Disorder should be conducted annually for all primary care patients except those currently being treated for depression.
Identifying a Framework

Goal setting and task performance:

- Assign specific goals that organizational participants can meet and accept
- Involve all participants in defining goals and determining strategies to implement
- Provide feedback concerning goal attainment on both individual and organizational level
Conceptual Framework

Interactive Factor
- Participation

Cognitive Processing
- Expectancy
- Self-efficacy

External factors
- Team
- Feedback

Goal Commitment/Implementation outcomes:
- Agreement with guideline
- Adherence to guideline recommendations
- Improved knowledge of evidence supporting best practices
- Delivery of best practices

Performance of Clinical Practice
Hypotheses 1: Implementation

Interactive Factor

H1: Participation

Goal Commitment/Implementation outcomes:
- Agreement with guideline
- Adherence to guideline recommendations
- Improved knowledge of evidence supporting best practices
- Delivery of best practices
Hypotheses 2 and 3: Implementation

External factors

H2: Team

H3: Feedback

Goal Commitment/Implementation outcomes:
- Agreement with guideline
- Adherence to guideline recommendations
- Improved knowledge of evidence supporting best practices
- Delivery of best practices
Hypotheses 4 and 5: Implementation

**Internal factors**

H4: Expectancy

H5: Self-efficacy

**Goal Commitment/Implementation outcomes:**

- Agreement with guideline
- Adherence to guideline recommendations
- Improved knowledge of evidence supporting best practices
- Delivery of best practices
Hypothesis 6: Performance

Goal Commitment/Implementation outcomes:

- Agreement with guideline
- Adherence to guideline recommendations
- Improved knowledge of evidence supporting best practices
- Delivery of best practices
Data Source: Provider Level

Determinants of Clinical Practice Guideline Implementation Effectiveness Study

Primary data collected to assess provider experience, work conditions, attitudes and experience with guideline implementation, culture, quality improvement efforts
Data Sources: Organizational Level

- External Peer Review Program (EPRP)
  - Review of clinical records on achieving depression screening for eligible patients

- American Hospital Association (AHA) Annual Survey
  - Hospital characteristics including size, teaching status, rural/urban location
VA’s Quality Enhancement Research Initiative (QUERI)

- The VA has recognized the adoption and implementation of evidence-based practices in its medical centers as an area for improvement.

- An example is QUERI, with the Mission to “enhance the quality and outcomes of VA health care by systematically implementing clinical research findings and evidence-based recommendations into routine clinical practice.”
QUERI

- It is a partnership of health services researchers and clinical managers.

- QUERI provides a unique opportunity to understand guideline implementation.
Sampling

Survey Recruitment

- National sample of VA providers from 139 VA hospitals, stratified by provider type (physicians, nurse, nurse practitioners, physician assistants)

Sample

- N= 2,438 VA providers
- Response rate= 58%
Sample Demographics

- Gender: 61.8% male
- Age: 47.8% over age 50
- Professional Training:
  - Physicians: 37.8%
  - Nurse Practitioners: 13.0%
  - Nurses: 37.9%
  - Physician Assistants: 6.7%
  - Other: 6.1%
Methods: Understanding the Implementation Process

- **Hierarchical Generalized Linear Model (HGLM):**
  - Implementation outcome $x = f(\text{external factors, internal factors, interactive factors, control})$
<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Very little</th>
<th>Some</th>
<th>Great</th>
<th>Very great</th>
</tr>
</thead>
<tbody>
<tr>
<td>You adhere to the recommendations</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Implementation Outcome Variables

- Agreement with guideline recommendations
- Adherence to guideline recommendations
- Improved knowledge of evidence supporting best practices
- Delivery of best practices
Measures

Interactive Factors

- Clinicians have input into guideline implementation
- Provider involvement in quality of care improvement
- Culture emphasizes participative decision-making
Measures

- **External Factor**
  - Providers receive individualized feedback on performance
  - Providers receive feedback on organizational guideline adherence
  - Team work exists for guideline implementation
  - Inter-departmental coordination

<table>
<thead>
<tr>
<th>External factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>H2: Team</td>
</tr>
<tr>
<td>H3: Feedback</td>
</tr>
</tbody>
</table>
Measures

- Internal Factors
  - Providers believe feedback improves performance
  - Frequency of performance data distribution
  - Access to information/literature at point of care
Control Variables

- Provider demographics
  - Age
  - Gender

- Provider practice
  - Years in practice
  - Type of provider (physician, nurse practitioners, nurses, physician assistants)
Methods: Effects of Implementation on Practice

- HGLM:
  - Clinical performance = $f(4$ intermediate implementation outcomes, control)
Measures

- **Dependent Variable:** Achieving an 85% or greater rate of appropriate depression screenings in eligible patients

- **Independent Variables:**
  - Agreement with guideline implementation
  - Guideline adherence
  - Improved knowledge in best practices
  - Delivery of best practice
Control Variables

- **Provider Level:**
  - Provider gender
  - Number of years in practice

- **Hospital Level:**
  - Bed size
  - Teaching status of facility
  - Urban location
# Results: Interactive Factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>Agreement with Guideline</th>
<th>Guideline Adherence</th>
<th>Improved knowledge</th>
<th>Delivery of Best Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provider have input into guideline implementation</td>
<td>1.44*</td>
<td>1.84***</td>
<td>1.50*</td>
<td>1.61**</td>
</tr>
<tr>
<td>Involved in improving quality of care</td>
<td>1.19</td>
<td>1.47**</td>
<td>1.65***</td>
<td>1.41*</td>
</tr>
<tr>
<td>Participative culture</td>
<td>1.19</td>
<td>0.92</td>
<td>1.18</td>
<td>1.15</td>
</tr>
</tbody>
</table>

*** *p* ≤ 0.0001  ** *p* ≤ 0.01  * *p* ≤ 0.05  † *p* ≤ 0.10
## Results: External Factors

<table>
<thead>
<tr>
<th>Team work in implementation</th>
<th>Agreement with Guideline</th>
<th>Guideline Adherence</th>
<th>Improved knowledge</th>
<th>Delivery of Best Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.02****</td>
<td>1.30</td>
<td>1.92***</td>
<td>1.96***</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inter-departmental coordination</th>
<th>0.95</th>
<th>1.11</th>
<th>1.01</th>
<th>1.09</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Receipt of feedback on organizational adherence</th>
<th>0.93</th>
<th>0.96</th>
<th>0.93</th>
<th>0.90</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Receipt of individualized feedback</th>
<th>1.21</th>
<th>1.37*</th>
<th>1.34†</th>
<th>1.18</th>
</tr>
</thead>
</table>

* **** p≤0.0001  *** p≤0.005  ** p≤0.01  * p≤0.05  † p≤0.10
## Results: Internal Factors

<table>
<thead>
<tr>
<th></th>
<th>Agreement with Guideline</th>
<th>Guideline Adherence</th>
<th>Improved knowledge</th>
<th>Delivery of Best Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Expectancy</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feedback affects performance</td>
<td>1.59***</td>
<td>1.45*</td>
<td>1.52*</td>
<td>1.62**</td>
</tr>
<tr>
<td><strong>Self-efficacy</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency of performance data distribution</td>
<td>1.15***</td>
<td>1.25****</td>
<td>1.17***</td>
<td>1.14**</td>
</tr>
<tr>
<td>Ready access to information</td>
<td>1.32*</td>
<td>1.11</td>
<td>1.14</td>
<td>1.26</td>
</tr>
</tbody>
</table>

**** p≤0.0001  ***p≤0.005  **p≤0.01  *p≤0.05  †p≤0.10
## Results: Performance

<table>
<thead>
<tr>
<th>Intermediate Implementation Outcomes</th>
<th>Dependent Variable: ≥85 % Screened (OR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreement with Guideline implementation</td>
<td>0.87</td>
</tr>
<tr>
<td>Guideline Adherence</td>
<td>1.70*</td>
</tr>
<tr>
<td>Guideline implementation improved knowledge</td>
<td>1.08</td>
</tr>
<tr>
<td>Guideline implementation enhanced delivery of best practice</td>
<td>0.98</td>
</tr>
</tbody>
</table>

**** $p \leq 0.0001$  ***$p \leq 0.005$  **$p \leq 0.01$  *$p \leq 0.05$
## Summary of Findings

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Hypothesis was</th>
</tr>
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<tbody>
<tr>
<td>H1: Participation</td>
<td>Supported</td>
</tr>
<tr>
<td>H2: Teamwork</td>
<td>Partially Supported</td>
</tr>
<tr>
<td>H3: Feedback</td>
<td>Partially Supported</td>
</tr>
<tr>
<td>H4: Expectancy of Success</td>
<td>Supported</td>
</tr>
<tr>
<td>H5: Self-efficacy</td>
<td>Supported</td>
</tr>
<tr>
<td>H6: Guideline implementation enhanced delivery of best practice</td>
<td>Partially Supported</td>
</tr>
</tbody>
</table>
Conclusion

- Goal commitment framework can be useful in understanding factors that facilitated the implementation and use of depression guidelines.

- Participation, performance feedback, teamwork, expectancy, and self efficacy led to greater goal commitment, facilitating the implementation process.
Limitations

- Self-reported performance
- Lack of data to adjust for patient characteristics and utilization
- Single-operational measures as proxies for self-efficacy and expectancy
- Cross-sectional data
Implications

- Understanding mechanisms through which improved implementation and care delivery outcomes are achieved is important.

- This framework may be generalizable to other settings and useful to study the implementation of other care models/innovations.

- Instituting systems/programs to facilitate timely, appropriate performance feedback and provider participation in decision-making should enhance organizational change and learning.
Acknowledgements

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Thank You

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