eAGREE Training Tool: An electronic educational tool designed to improve a learner’s performance, satisfaction, and self-efficacy with the AGREE II

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Melissa Brouwers, PhD
McMaster University, Canada
on behalf of the AGREE A3 Collaboration
mbrouwer@mcmaster.ca
Research Team

AGREE A3 Co-Investigators

Dr. Melissa Brouwers  
Dr. George Browman  
Dr. Jako S. Burgers  
Dr. Françoise Cluzeau  
Dr. Béatrice Fervers  
Dr. Anna Gagliardi  
Dr. Jeremy Grimshaw  
Dr. Steven Hanna  
**Dr. Anthony Levinson (STREAM 1 co-lead)**
Dr. Holger Schünemann  
Dr. Louise Zitzelsberger

AGREE A3 Research Secretariate Team

Julie Makarski, MSc, Project Manager  
Lisa Durocher, MSc, Research Coordinator  
Sharon Garden, Administrative Support
Funding and Conflict of Interest

Funding received from the Canadian Institutes of Health Research

Brouwers, Cluzeau and Burgers are trustees of the AGREE Research Trust a non-profit entity that promotes the AGREE enterprise and research in this area.

With the exception of Levinson, Gagliardi and Schünemann, all members of the team were co-investigators in the AGREE II project.
Background

- AGREE II (Brouwers et al., CMAJ 2010)
  - new 7-point response scale
  - ½ items modified, added, or deleted
  - completely restructured User’s Manual
  - construct validity established

- now….facilitate uptake of AGREE II
To design, execute and evaluate two educational strategies to accelerate uptake of AGREE II
**Educational Interventions**

- evidence of effectiveness in other contexts
- web-based

<table>
<thead>
<tr>
<th>TUTORIAL</th>
<th>PRACTICE EXERCISE</th>
</tr>
</thead>
<tbody>
<tr>
<td>virtual coach</td>
<td>directed learning &amp; feedback</td>
</tr>
</tbody>
</table>

- vs. pass instruction – PDF of AGREE II
Methods

- Participants
  - trainees, clinicians, methodologist, researchers, policy
  - recruited internationally
  - limited to no experience with the AGREE enterprise

- Randomized to 1 of 3 conditions
Outcomes

- time on task
- training satisfaction
- mental effort
- self efficacy
- performance – pass/fail criteria
- performance – compared to “experts”
- perceptions of AGREE II
Hypotheses

- educational inventions superior to control on all outcome measures
## Results: Time on Task (min)

- NO significant differences.
- Huge variability.

<table>
<thead>
<tr>
<th></th>
<th>PDF Review</th>
<th>Test PG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>38.4 (18.3)</td>
<td>75.6 (50.0)</td>
</tr>
<tr>
<td>Tutorial</td>
<td>31.7 (25.0)</td>
<td>70.5 (52.9)</td>
</tr>
<tr>
<td>Tutorial + Practice</td>
<td>29.1 (22.8)</td>
<td>61.9 (29.5)</td>
</tr>
</tbody>
</table>
Results: Training Satisfaction

- High levels of satisfaction (means 5.9 or higher)
- NO differences: appropriate level valuable learning positive learning increased understanding increased confidence able to navigate information was logical met training objectives met learning needs overall satisfaction
## Results: Mental Effort

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Tutorial</th>
<th>Tutorial + Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>TUTORIAL</td>
<td>NA</td>
<td>3.0</td>
<td>2.5</td>
</tr>
<tr>
<td>PDF AGREE II</td>
<td>3.3</td>
<td>3.8</td>
<td>2.7</td>
</tr>
<tr>
<td>PRACTCE EXERCISE</td>
<td>–</td>
<td>–</td>
<td>3.8</td>
</tr>
<tr>
<td>PG TRAINING</td>
<td>4.0</td>
<td>3.6</td>
<td>3.7</td>
</tr>
</tbody>
</table>
Results: Self Efficacy

- NO differences between groups.
- High levels of self-efficacy (means 5.4 or higher):
  - confidence in ability to use AGREE II
  - comfort with structure of AGREE II
  - comfort with content of AGREE II
  - confidence in applying AGREE II skills
Results: AGREE II Performance

- Pass/Fail Criteria
- Practice Exercise (one group)

86.4% pass rate vs. 73% with historical controls
Results: AGREE II Performance

- Pass/Fail Criteria
- Test Exercise (all groups)
- NO difference between groups BUT….

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Tutorial</th>
<th>Tutorial + Practice Exercise</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>85%</td>
<td>60%</td>
<td>70%</td>
</tr>
</tbody>
</table>
Results: AGREE II Performance

- Pass/Fail Criteria
- Test Exercise (all groups) X Topic
- NO difference between groups BUT….

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Tutorial</th>
<th>Tutorial + Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Pass – Cancer</td>
<td>87.5</td>
<td>57.1</td>
<td>90.0</td>
</tr>
<tr>
<td>% Pass – Critical Care</td>
<td>100.0</td>
<td>50.0</td>
<td>66.7</td>
</tr>
<tr>
<td>% Pass – Cardiovascular</td>
<td>71.4</td>
<td>66.7</td>
<td>42.9</td>
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</tbody>
</table>
Results: AGREE II Performance

- Comparison with Expert Scores
- NO differences between groups.

<table>
<thead>
<tr>
<th>Domain</th>
<th>tutorial</th>
<th>tutorial + practice</th>
<th>control</th>
<th>p value</th>
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</thead>
<tbody>
<tr>
<td>Scope and Purpose</td>
<td>3.21</td>
<td>2.61</td>
<td>1.90</td>
<td>0.67</td>
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<tr>
<td>Stakeholder Involvement</td>
<td>1.68</td>
<td>2.03</td>
<td>1.71</td>
<td>0.89</td>
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<tr>
<td>Rigour of Development</td>
<td>1.90</td>
<td>1.85</td>
<td>1.02</td>
<td>0.53</td>
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<tr>
<td>Clarity of Presentation</td>
<td>0.93</td>
<td>2.86</td>
<td>2.14</td>
<td>0.12</td>
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<tr>
<td>Applicability</td>
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<td>1.92</td>
<td>2.05</td>
<td>0.45</td>
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<tr>
<td>Editorial Independence</td>
<td>3.18</td>
<td>2.84</td>
<td>2.63</td>
<td>0.60</td>
</tr>
</tbody>
</table>
Results: AGREE II Perceptions

- NO differences between groups.
- Favorable perceptions of AGREE II (means 6.0 or higher):
  - AGREE II useful tool to inform PG development.
  - AGREE II useful tool to inform PG reporting.
  - AGREE II useful tool to evaluate PG.
  - User’s Manual will enhance my skill applying the AGREE II.
Interpretation

Is the GLASS half full?

Is the GLASS half empty?

Or am I just drinking a glass of wine?
Interpretation

- Interventions did not work.
  OR

- User’s Manual is a lot better than what we first thought.
  OR

- Many training options – individuals can match their learning style and needs.