

Use of a wiki-based educational resource as a knowledge translation intervention to improve research in child health



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Background

Evaluations of clinical research in pediatrics have consistently found that randomized controlled trials (RCTs) are at varying risk of bias. This increases the likelihood that reported intervention effects are exaggerated. This in turn can negatively impact the relevance of the trial and the conclusions that may be drawn from its results. With a well-established evidence base outlining these limitations, the research agenda must now focus on knowledge translation.

Objective

To evaluate a wiki designed to aid pediatric trialists and systematic reviewers in the design, conduct, and appraisal of methodologically rigorous research.

Methods

Wiki Development

- The wiki was designed in collaboration with the **Star Child Health Initiative** – an international group dedicated to improving the design, conduct, and reporting of clinical research in children
- Wiki content is based on the domains included in the **Cochrane Collaboration's Risk of Bias tool**
- Educational module combines didactic and interactive components:
 - Tools to assist in protocol development (e.g., checklists)
 - Interactive examples of study design features that may be assessed for risk of bias
 - Pediatric-specific issues related to trial design
 - A discussion forum
 - Links to references and relevant organizations

Study Design and Recruitment

- Pilot test designed to evaluate the usability of the wiki among trialists and systematic reviewers
- Participants were recruited through RCT and systematic review courses, promotion at pediatric and methodological conferences, and targeted email requests

Data Collection and Analysis

- **Qualitative:** Semi-structured interviews were conducted with 15 researchers at varying stages in their careers and with different levels of experience with risk of bias. Participants were asked about usability, preferences, and suggestions for improvement. Data were analyzed using content analysis.
- **Quantitative:** Web traffic data, including number of unique visitors, geographic location, and page views, were collected through Wikispaces and Google Analytics. Descriptive data are presented.

Results



Study Population

- The wiki was pilot tested with 15 participants:
 - 4 physicians, 6 PhD-trained researchers, 4 PhD students, 4 masters-trained researchers, 1 entering a masters program
 - 6 specialized in pediatrics, 7 had experience conducting RCTs, 9 had experience conducting systematic reviews
 - 3 were new to the concepts of risk of bias
 - 13 were from Canada, 1 was from the United Kingdom, 1 was from the Netherlands

Usability

- Participants found the wiki to be well organized, easy to use, and straightforward to navigate
- Layering of content was a strength, with a focus on general and introductory content and links to more detailed or complex information
- Participants liked having a centralized collection of methodological resources
- Suggestions for improvement were focused on clarification and aesthetics, rather than the content or format

User Preferences

- Participants liked supplementary features that added relevance to the theory: case studies, real-world illustrations, interactive polls that served as teaching examples, diagrams, and the Twitter feed
- Users placed more importance on the ease of use of the site than on aesthetics, in particular anything that caused the pages to load slowly
- Comments were divided regarding the level of technology used. While some users found the simplicity of the site to be a significant benefit, others suggested including more advanced functions that would increase the sophistication of the site

Web Traffic

- From May 3 – July 5, 2012, 240 unique visitors accessed the wiki (87.6% visits from Canada)
- The most highly accessed pages were the domain-specific pages for sequence generation and allocation concealment and the comprehensive tools pages, compiling the tools and resources for all of the risk of bias domains
- While interactivity was emphasized in the design of the wiki, particularly in the pediatric-specific issues and discussion pages, there were no contributions to any of the discussion forums

Discussion and Conclusions

- Overall, the feedback on the risk of bias wiki was positive. Participants were interested in the opportunities provided by the wiki as a novel educational tool and felt that this platform has potential for future uses in providing methodological training.
- Obtaining buy-in represents a challenge, but the use of interactive components was intended to increase adoption
- The ideal use of a wiki would likely be in the context of a course or training module in which users are motivated or required to participate
- The feedback obtained in this pilot test will be used to modify the wiki, which will undergo further evaluation for effectiveness. If shown to be beneficial, an implementation strategy will be devised.
- Built upon an adaptation of the existing knowledge translation evidence base, the risk of bias wiki holds promise for use as an online educational resource for trialists and systematic reviewers.

Category

Typical Comments

Usability

- "I thought everything was really easy to read and easy to follow and not too scientific, like I could follow everything." – 07 (trialist, systematic reviewer)
- "It did strike me as a nice centralized place to have all that information. Most of it, as far as I can tell, is out there somewhere; the question is finding it all in one place. I thought that was good there." – 09 (trialist, systematic reviewer)

User Preferences

- "[The examples were] a really interactive way for people to actually sit down, like for me not to know a lot about risk of bias, and be learning it on the go, and you don't have to do a lot to learn piece by piece. Like if I had to go do something else, then I could still go back to it and pick away at it, [...] then you don't feel like it's too intensive." – 03 (project coordinator)
- "I'm not much for websites with lots of bells and whistles, so I like the fact that it's not overwhelming, but it's not bland either." – 12 (systematic reviewer)